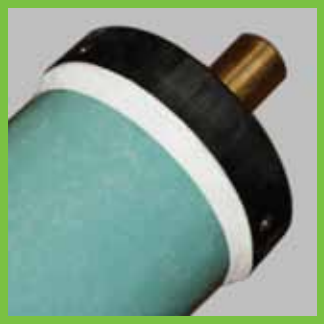












dbSpectra
Always a Better Value

# 2012 PRODUCT GUIDE

Antennas • Combiners • Filters • Duplexers • Multicouplers

# Omni Antennas

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

- **360º 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 -30ºC to +60ºC.
- **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, ft²(m²) | 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 (02.2) | 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) |

Antennas

# 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, ft²(m²) | 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) |

Antennas

# Control Station
## 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**

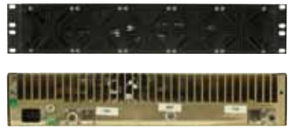
- Separate TX and RX antennas.
- Low profile building block modules.
- TX and RX on each radio port.
- Combine control stations and enhance system isolation.
- Amplifier for RX signals.
- Analog or digital radio compatible.

**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** | | | | | | |
| **Frequency Range** | 100-960 MHz | 100-960 MHz | 118-512 MHz | 746-960 MHz | 746-960 MHz | 150-960 MHz |
| **Frequency Separation** | No limitations | No limitations | No limitations | No limitations | No limitations | No limitations |
| **# of Channels** | 8 | 16 | 4, 8, 12 or 16 | 6, 8, 12, 16, 18, 24 or 32 | 8 | 2, 3 or 4 |
| **TX to TX Isolation** | 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) |
| **TX to RX Isolation** | 60 dB (min) | 60 dB (min) | 60 dB (min), 70 dB (max) | 60 dB (min), 70 dB (max) | 55 dB (min), 60 dB (max) | |
| **ANT to TX Isolation** | 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) |
| **RX to RX Isolation** | 60 dB (min) | 60 dB (min) | 60 dB (min) | 60 dB (min) | 55 dB (min) | |
| **Insertion Loss** | 33 dB (min), 35 dB (max) | 39 dB (typ) | | | 12 dB (typ) | -4.5 dB to 7.9 dB (typ) |
| **TX Loss*** | | | 7.6 dB to 15 dB* | 9.2 dB to 19.5 dB* | | |
| **RX Loss*** | | | 8 dB to 16 dB* | 10.5 dB to 20 dB* | 12.7 dB | |
| **RX Gain*** | | | +4 dB to -3.5 dB (typ)* | +1.5 dB to -8 dB* | | |
| **TX Return Loss** | 19 dB (min) | 19 dB (min) | 14 dB (min) | 14 dB (min) | 14 dB (min) | 14 dB (min) |
| **RX Return Loss** | 14 dB (min) | 14 dB (min) | 10 dB (min) | 10 dB (min) | 14 dB (min) | |
| **Power/Channel** | | | 50 Watts | 50 Watts | | |
| **Power/Channel** 100% Duty Cycle | 15 Watts | 15 Watts | | | 15 Watts | |
| **Power/Channel** 40% Duty Cycle | 35 Watts | 35 Watts | | | 35 Watts | |
| **Power/Channel** 20% Duty Cycle | 50 Watts | 50 Watts | | | 50 Watts | |
| **Power Source VAC** | | | 110 to 240 VAC 50/60 Hz | 110 to 240 VAC 50/60 Hz | | 110 to 240 VAC 50/60 Hz |
| **Power Source VDC** | | | 12 VDC (nominal) | 12 VDC (nominal) | | 12 VDC (nominal) |
| **Power Consumption** | | | AC 30 Watts, DC 18 Watts | AC 30 Watts, DC 18 Watts | | AC 30 Watts, DC 18 Watts |
| **MECHANICAL SPECIFICATIONS** | | | | | | |
| **Construction, Finish** | Aluminum, Gold | Aluminum, Gold | Aluminum, Black | Aluminum, Black | Aluminum, Gold | Aluminum, Black |
| **Input Connector** | N(F) | N(F) | N(F) | N(F) | N(F) | N(F) |
| **Mounting** | EIA 19-inch Rack | EIA 19-inch Rack | EIA 19-inch Rack | EIA 19-inch Rack | EIA 19-inch Rack | EIA 19-inch Rack |
| **Temperature Range** | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º 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) |
| **Height*** | 1.75 in (44.5 mm)<br>1 RU | 3.5 in (88.9 mm)<br>2 RU | 1.75 in (44.5 mm) to 8.75 in (222.3 mm)*<br>1 RU to 5 RU* | 1.75 in (44.5 mm) to 8.75 in (222.3 mm)*<br>1 RU to 5 RU* | 1.75 in (44.5 mm)<br>1 RU | 3.5 in (89 mm)<br>2 RU |
| **Depth** | 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) |
| **Net Weight*** | 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) |
| **Shipping Weight*** | 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.



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# Cavity Transmit 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 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Frequency Range (MHz)** | 148-174 MHz | 148-174 MHz | 148-174 MHz | 148-174 MHz | 380-512 MHz | 380-512 MHz | 763-940 MHz |
| **Frequency Separation (kHz)** | 75 kHz (50 kHz w/optional load kit) | 150 kHz | 75 kHz | 150 kHz | 250 kHz | 100 kHz | 150 kHz |
| **# of Channels** | 2 to 6 | 2 to 6 | 2 to 7 | 2 to 6 | 2 to 8 | 2 to 10 | 2 to 24 |
| **TX to TX Isolation** | 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) |
| **TX to RX Isolation** | | | | | 25 dB at 5 MHz | 35 dB at 5 MHz | >45 dB at 30 MHz |
| **ANT to TX Isolation** | 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) |
| **Transmitter SBN at Receiver** | > 45 dB at 1.5 MHz | | >40 dB at 5 MHz | 35 dB at 5 MHz | | | |
| **Insertion Loss*** | 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)* |
| **Transmitter Return Loss** | 14 dB (min) | 19 dB (min) | 19 dB (min) | 19 dB (min) | 19 dB (min) | 19 dB (min) | 19 dB (min) |
| **Power/Channel** | 125 Watts | 125 Watts | 125 Watts | 100 Watts | 100 Watts | 150 Watts | 110 Watts |
| **MECHANICAL SPECIFICATIONS** | | | | | | | |
| **Construction, Finish** | Aluminum, Black | Aluminum, Black | Aluminum, Black | Aluminum, Black | Copper, Black | Copper, Black | Ceramic, Black |
| **Input Connector** | 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) |
| **Output Connector** | | | | | | | N(F) or 7/16 DIN(F) |
| **Mounting** | EIA 19” Rack | EIA 19” Rack | DBMOFR-22U (45” Rack)<br>DBMOFR-43U (83” Rack)<br>2-post rack (86”) | 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 | 5° to +60° C | -10° to +60° C | -30° to +60° C |
| **DIMENSIONS** | | | | | | | |
| **Cavity Diameter** | 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<br>(235 mm x 215 mm x 235 mm) | 5 in (127 mm) |
| **Width*** | 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) |
| **Height*** | 29 in (736.6 mm)<br>17 RU | 26 in (660.4 mm)<br>15 RU | 29 in (736.6 mm)<br>17 RU | 26 in (660.4 mm)<br>15 RU | 2 to 4 channels - 7 in (177.8 mm)*<br>4 RU* | 4 channel - 21 in (533.4 mm)*<br>12 RU* | 3 channel - 7 in (177.8 mm)*<br>4 RU* |
| **Depth*** | 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)* |
| **Net Weight*** | 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)* |
| **Shipping Weight*** | 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.



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# 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**

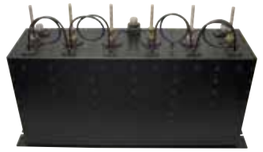
- Uses 2 TX and 2 RX cavities.
- Couple 2 transmitters, 2 receivers or 2 simplex units into a common antenna with frequencies separated by 500 or 300 kHz or more.

**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.

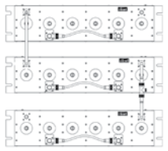
| ELECTRICAL SPECIFICATIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Frequency Range** | 148-174 MHz | 138-150 MHz | 138-174 MHz | 138-174 MHz | 370-512 MHz | 370-512 MHz | 806-869 MHz |
| **Frequency Separation** | 750 kHz | 750 kHz | 500 kHz | 300 kHz | 3 kHz | 3 kHz | 45 kHz |
| **# of 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** | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º 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)<br>3 RU | 5.25 in (133 mm)<br>3 RU | 34.5 in (876.3 mm)<br>20 RU | 34.5 in (876.3 mm)<br>20 RU | 5.3 in (133 mm)<br>3 RU | 5.3 in (133 mm)<br>3 RU | 5.3 in (133 mm)<br>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**

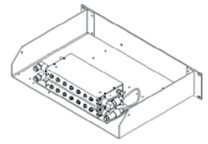
- 4 to 6 MHz passband notch duplexer.
- Mobile applications for multi-frequency radios.

**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** | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º 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) | | | | | | | |

Duplexers

# 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**

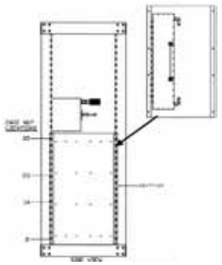
- Highly selective VHF window filter.
- Use as preselector between RX antenna and multicoupler.
- Factory tuned to specified frequencies.

**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 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Frequency Range** | 150-174 MHz | 148-174 MHz | 148-174 MHz | 148-174 MHz | 148-174 MHz | 150-165 MHz | 370-512 MHz | 450-512 MHz |
| **Pass Bandwidth** | variable | variable | variable | 0.5 MHz | 1.0 MHz | 2 MHz | 2 MHz to 4 MHz | 2 MHz to 4 MHz |
| **Frequency Separation** | | | | | | 2.5 MHz | | 6 MHz (min) @ 450-470 MHz<br>3 MHz (min) @ 470-512 MHz |
| **# of Cavities** | 1 | 2 | 3 | 4 | 5 | 4 | | |
| **# of Channels** | 1 | 1 | 1 | | | within bandwidth | within bandwidth | within bandwidth |
| **Isolation** | | | | 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 |
| **Insertion Loss** | 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 |
| **Return Loss** | 14 dB | 14 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 |
| **Power Rating** | 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** | | | | | | | | |
| **Construction, Finish** | Aluminum, Black | Aluminum, Black | Aluminum, Black | Aluminum, Black | Aluminum, Black | Aluminum, Black | Copper, Black | Copper, Black |
| **Input Connector** | 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 |
| **Temperature Range** | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C | -30º to +60º C |
| **DIMENSIONS** | | | | | | | | |
| **Cavity Width** | 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) |
| **Width** | 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) |
| **Height** | 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) |
| **Depth** | 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) |
| **Net Weight** | 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) |
| **Shipping Weight** | 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

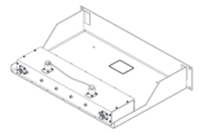


**DB3176**
**TX or RX**
**Window Filter**

- 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.

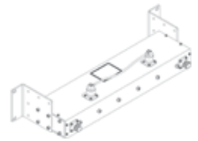
**DS4FRWN04**
**Single Window Filter**

- 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.



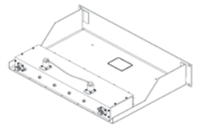
**DS7830**
**RX Filter**

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



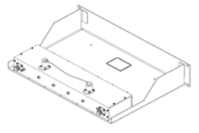
**DS7012**
**Window Filter**

- 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.

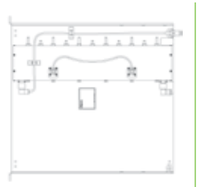


**DBS4258S10WT**
**RX Filter**

- Low insertion loss and high isolation.

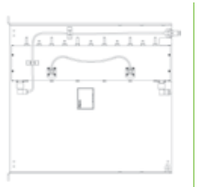
**DB4259S18RWT**
**Trunked RX Filter**

- 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.



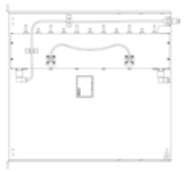
**DS8018TX-WT**
**TX Filter**

- 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 ± 2.5 MHz from band edges | Single >60 dB @ ± 1 MHz Dual >25 dB @ ± 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) |



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# Receiver Multicouplers

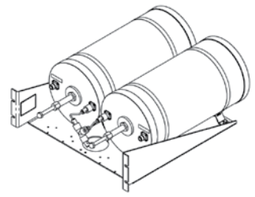


### DBSMC Series

- 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<br>< 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<br>12 VDC (nominal) | 90-240 VAC, 50/60 Hz<br>12 VDC (nominal) | | 90-240 VAC, 50/60 Hz<br>6 to 12 VDC (nominal) | 90-240 VAC, 50/60 Hz<br>6 to 12 VDC (nominal) | 90-240 VAC, 50/60 Hz<br>12 VDC (nominal) | ± 36 to 70 VDC | 90-240 VAC, 50/60 Hz<br>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)<br>1 RU | 1.75 in (44.5 mm)<br>1 RU | 8.75 in (222 mm)<br>5 RU per 2 channels | 1.75 in (44.5 mm)<br>1 RU | 1.75 in (44.5 mm)<br>1 RU | 1.75 in (44.5 mm)<br>1 RU | 1.75 in (44.5 mm)<br>1 RU | 3.5 in (88.9 mm)<br>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.

Multicouplers

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