

# Frequency Mixer

ADE-ED7079/1

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>IF FIXED<br>@IF(OUT)=30MHz<br>(dB) |       |       |
|---------------------|-------------|-------------------------------------------------------|-------|-------|
|                     |             | @LO (dBm)                                             |       |       |
|                     |             | +4                                                    | +7    | +10   |
| 460.0               | 490.0       | 18.88                                                 | 10.69 | 8.95  |
| 520.0               | 550.0       | 17.37                                                 | 9.62  | 8.43  |
| 580.0               | 610.0       | 14.13                                                 | 8.90  | 8.11  |
| 640.0               | 670.0       | 12.00                                                 | 8.50  | 7.90  |
| 700.0               | 730.0       | 11.36                                                 | 8.29  | 7.65  |
| 760.0               | 790.0       | 9.95                                                  | 8.05  | 7.53  |
| 820.0               | 850.0       | 9.47                                                  | 7.83  | 7.39  |
| 880.0               | 910.0       | 9.00                                                  | 7.69  | 7.26  |
| 940.0               | 970.0       | 8.70                                                  | 7.62  | 7.10  |
| 1000.0              | 1030.0      | 8.43                                                  | 7.54  | 7.02  |
| 1060.0              | 1090.0      | 8.24                                                  | 7.49  | 7.06  |
| 1120.0              | 1150.0      | 8.18                                                  | 7.48  | 7.09  |
| 1180.0              | 1210.0      | 8.21                                                  | 7.50  | 7.11  |
| 1240.0              | 1270.0      | 8.23                                                  | 7.40  | 6.98  |
| 1300.0              | 1330.0      | 8.16                                                  | 7.20  | 6.76  |
| 1360.0              | 1390.0      | 8.39                                                  | 7.16  | 6.52  |
| 1420.0              | 1450.0      | 8.41                                                  | 7.29  | 6.35  |
| 1480.0              | 1510.0      | 8.21                                                  | 7.38  | 6.49  |
| 1540.0              | 1570.0      | 7.98                                                  | 7.27  | 6.53  |
| 1600.0              | 1630.0      | 7.66                                                  | 7.00  | 6.41  |
| 1640.0              | 1670.0      | 7.68                                                  | 7.06  | 6.52  |
| 1700.0              | 1730.0      | 7.52                                                  | 6.96  | 6.48  |
| 1740.0              | 1770.0      | 7.55                                                  | 7.05  | 6.61  |
| 1800.0              | 1830.0      | 7.51                                                  | 7.08  | 6.70  |
| 1840.0              | 1870.0      | 7.66                                                  | 7.23  | 6.89  |
| 1900.0              | 1930.0      | 7.75                                                  | 7.34  | 7.03  |
| 1940.0              | 1970.0      | 7.86                                                  | 7.44  | 7.12  |
| 2000.0              | 2030.0      | 8.08                                                  | 7.65  | 7.33  |
| 2040.0              | 2070.0      | 8.23                                                  | 7.76  | 7.44  |
| 2100.0              | 2130.0      | 8.51                                                  | 8.02  | 7.69  |
| 2140.0              | 2170.0      | 8.62                                                  | 8.10  | 7.75  |
| 2200.0              | 2230.0      | 8.97                                                  | 8.38  | 8.02  |
| 2240.0              | 2270.0      | 9.13                                                  | 8.47  | 8.10  |
| 2300.0              | 2330.0      | 9.55                                                  | 8.80  | 8.42  |
| 2340.0              | 2370.0      | 9.86                                                  | 8.96  | 8.59  |
| 2400.0              | 2430.0      | 10.71                                                 | 9.47  | 9.01  |
| 2440.0              | 2470.0      | 11.03                                                 | 9.68  | 9.24  |
| 2500.0              | 2530.0      | 12.18                                                 | 10.26 | 9.70  |
| 2540.0              | 2570.0      | 12.66                                                 | 10.49 | 9.94  |
| 2600.0              | 2630.0      | 14.60                                                 | 11.14 | 10.37 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | IP3 INPUT<br>(dBm) |       |       |
|---------------------|-------------|--------------------|-------|-------|
|                     |             | @LO (dBm)          |       |       |
|                     |             | +4                 | +7    | +10   |
| 460.0               | 490.0       | 1.40               | 12.19 | 19.27 |
| 520.0               | 550.0       | 0.72               | 14.71 | 18.22 |
| 580.0               | 610.0       | 2.88               | 18.53 | 16.99 |
| 640.0               | 670.0       | 6.06               | 20.67 | 17.94 |
| 700.0               | 730.0       | 6.87               | 18.48 | 15.38 |
| 760.0               | 790.0       | 11.78              | 17.30 | 16.61 |
| 820.0               | 850.0       | 13.97              | 14.00 | 15.40 |
| 880.0               | 910.0       | 16.09              | 12.78 | 14.38 |
| 940.0               | 970.0       | 15.31              | 12.98 | 13.90 |
| 1000.0              | 1030.0      | 15.76              | 16.34 | 14.90 |
| 1060.0              | 1090.0      | 13.24              | 15.64 | 15.96 |
| 1120.0              | 1150.0      | 12.20              | 14.87 | 15.91 |
| 1180.0              | 1210.0      | 11.06              | 13.84 | 15.02 |
| 1240.0              | 1270.0      | 10.23              | 12.67 | 14.05 |
| 1300.0              | 1330.0      | 9.16               | 11.24 | 13.75 |
| 1360.0              | 1390.0      | 9.88               | 9.31  | 12.94 |
| 1420.0              | 1450.0      | 8.64               | 10.35 | 10.80 |
| 1480.0              | 1510.0      | 9.52               | 10.89 | 10.07 |
| 1540.0              | 1570.0      | 8.95               | 9.34  | 9.62  |
| 1600.0              | 1630.0      | 7.75               | 8.24  | 8.70  |
| 1640.0              | 1670.0      | 6.71               | 7.11  | 7.87  |
| 1700.0              | 1730.0      | 5.37               | 5.79  | 6.68  |
| 1740.0              | 1770.0      | 4.96               | 5.19  | 5.94  |
| 1800.0              | 1830.0      | 4.69               | 4.78  | 5.31  |
| 1840.0              | 1870.0      | 4.59               | 4.68  | 5.15  |
| 1900.0              | 1930.0      | 4.85               | 5.23  | 5.80  |
| 1940.0              | 1970.0      | 5.29               | 5.76  | 6.44  |
| 2000.0              | 2030.0      | 6.20               | 6.94  | 7.76  |
| 2040.0              | 2070.0      | 6.68               | 7.93  | 8.89  |
| 2100.0              | 2130.0      | 7.66               | 9.57  | 10.93 |
| 2140.0              | 2170.0      | 7.86               | 9.96  | 11.94 |
| 2200.0              | 2230.0      | 8.48               | 9.37  | 11.45 |
| 2240.0              | 2270.0      | 8.09               | 8.29  | 10.61 |
| 2300.0              | 2330.0      | 7.63               | 7.86  | 10.56 |
| 2340.0              | 2370.0      | 6.92               | 7.95  | 11.01 |
| 2400.0              | 2430.0      | 6.05               | 9.22  | 11.91 |
| 2440.0              | 2470.0      | 5.67               | 10.32 | 12.76 |
| 2500.0              | 2530.0      | 4.74               | 11.03 | 13.02 |
| 2540.0              | 2570.0      | 4.24               | 9.97  | 13.69 |
| 2600.0              | 2630.0      | 4.71               | 7.47  | 12.88 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | COMPRESSION<br>@RF IN=+1dBm<br>(dB) |       |       |
|---------------------|-------------|-------------------------------------|-------|-------|
|                     |             | @LO (dBm)                           |       |       |
|                     |             | +4                                  | +7    | +10   |
| 460.0               | 490.0       | -3.73                               | -0.26 | -0.01 |
| 520.0               | 550.0       | -3.78                               | -0.05 | 0.01  |
| 580.0               | 610.0       | -2.30                               | 0.00  | 0.00  |
| 640.0               | 670.0       | -1.07                               | 0.04  | 0.01  |
| 700.0               | 730.0       | -0.81                               | 0.02  | 0.03  |
| 760.0               | 790.0       | -0.19                               | 0.06  | 0.01  |
| 820.0               | 850.0       | -0.03                               | 0.08  | 0.00  |
| 880.0               | 910.0       | 0.14                                | 0.13  | 0.03  |
| 940.0               | 970.0       | 0.18                                | 0.07  | 0.05  |
| 1000.0              | 1030.0      | 0.36                                | 0.06  | 0.04  |
| 1060.0              | 1090.0      | 0.36                                | 0.05  | -0.02 |
| 1120.0              | 1150.0      | 0.51                                | 0.09  | -0.02 |
| 1180.0              | 1210.0      | 0.46                                | 0.11  | -0.03 |
| 1240.0              | 1270.0      | 0.54                                | 0.27  | 0.04  |
| 1300.0              | 1330.0      | 0.51                                | 0.41  | 0.18  |
| 1360.0              | 1390.0      | 0.37                                | 0.60  | 0.40  |
| 1420.0              | 1450.0      | 0.28                                | 0.49  | 0.60  |
| 1480.0              | 1510.0      | 0.39                                | 0.39  | 0.56  |
| 1540.0              | 1570.0      | 0.67                                | 0.51  | 0.55  |
| 1600.0              | 1630.0      | 0.91                                | 0.67  | 0.62  |
| 1640.0              | 1670.0      | 1.01                                | 0.72  | 0.62  |
| 1700.0              | 1730.0      | 1.18                                | 0.81  | 0.67  |
| 1740.0              | 1770.0      | 1.27                                | 0.81  | 0.63  |
| 1800.0              | 1830.0      | 1.32                                | 0.81  | 0.54  |
| 1840.0              | 1870.0      | 1.41                                | 0.80  | 0.48  |
| 1900.0              | 1930.0      | 1.46                                | 0.79  | 0.47  |
| 1940.0              | 1970.0      | 1.61                                | 0.88  | 0.53  |
| 2000.0              | 2030.0      | 1.57                                | 0.87  | 0.53  |
| 2040.0              | 2070.0      | 1.74                                | 0.92  | 0.58  |
| 2100.0              | 2130.0      | 1.70                                | 0.91  | 0.59  |
| 2140.0              | 2170.0      | 1.86                                | 0.99  | 0.64  |
| 2200.0              | 2230.0      | 1.81                                | 0.96  | 0.65  |
| 2240.0              | 2270.0      | 1.76                                | 0.99  | 0.65  |
| 2300.0              | 2330.0      | 1.80                                | 0.99  | 0.64  |
| 2340.0              | 2370.0      | 1.79                                | 1.01  | 0.60  |
| 2400.0              | 2430.0      | 1.49                                | 0.92  | 0.52  |
| 2440.0              | 2470.0      | 1.27                                | 0.82  | 0.45  |
| 2500.0              | 2530.0      | 0.79                                | 0.77  | 0.41  |
| 2540.0              | 2570.0      | 0.67                                | 0.86  | 0.42  |
| 2600.0              | 2630.0      | -0.27                               | 1.05  | 0.49  |

## Typical Performance Data

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=1544.9MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=869.9MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=2240.1MHz<br>(dB) |
|----------------------|-------------|------------------------------------------------------------------|----------------------|-------------|-----------------------------------------------------------------|----------------------|-------------|------------------------------------------------------------------|
|                      |             | @LO (dBm)                                                        |                      |             | @LO (dBm)                                                       |                      |             | @LO (dBm)                                                        |
|                      |             | +7                                                               |                      |             | +7                                                              |                      |             | +7                                                               |
| 10.1                 | 1555.0      | 8.2                                                              | 10.1                 | 880.0       | 7.88                                                            | 1930.1               | 310.0       | 11.43                                                            |
| 50.1                 | 1595.0      | 8.0                                                              | 30.1                 | 900.0       | 7.68                                                            | 1890.1               | 350.0       | 10.62                                                            |
| 90.1                 | 1635.0      | 8.2                                                              | 50.1                 | 920.0       | 7.79                                                            | 1850.1               | 390.0       | 9.35                                                             |
| 130.1                | 1675.0      | 8.5                                                              | 70.1                 | 940.0       | 7.86                                                            | 1810.1               | 430.0       | 8.89                                                             |
| 170.1                | 1715.0      | 8.6                                                              | 90.1                 | 960.0       | 7.85                                                            | 1770.1               | 470.0       | 8.42                                                             |
| 210.1                | 1755.0      | 8.9                                                              | 110.1                | 980.0       | 7.91                                                            | 1710.1               | 530.0       | 7.83                                                             |
| 250.1                | 1795.0      | 9.0                                                              | 130.1                | 1000.0      | 8.00                                                            | 1670.1               | 570.0       | 7.56                                                             |
| 290.1                | 1835.0      | 9.0                                                              | 150.1                | 1020.0      | 8.09                                                            | 1610.1               | 630.0       | 7.39                                                             |
| 330.1                | 1875.0      | 9.0                                                              | 170.1                | 1040.0      | 8.18                                                            | 1570.1               | 670.0       | 7.22                                                             |
| 370.1                | 1915.0      | 8.8                                                              | 180.1                | 1050.0      | 8.18                                                            | 1510.1               | 730.0       | 7.13                                                             |
| 410.1                | 1955.0      | 8.8                                                              | 200.1                | 1070.0      | 8.19                                                            | 1470.1               | 770.0       | 6.97                                                             |
| 450.1                | 1995.0      | 8.5                                                              | 210.1                | 1080.0      | 8.19                                                            | 1410.1               | 830.0       | 6.88                                                             |
| 490.1                | 2035.0      | 8.3                                                              | 230.1                | 1100.0      | 8.30                                                            | 1370.1               | 870.0       | 6.77                                                             |
| 530.1                | 2075.0      | 8.2                                                              | 240.1                | 1110.0      | 8.34                                                            | 1310.1               | 930.0       | 6.67                                                             |
| 570.1                | 2115.0      | 7.9                                                              | 260.1                | 1130.0      | 8.43                                                            | 1270.1               | 970.0       | 6.57                                                             |
| 610.1                | 2155.0      | 8.0                                                              | 270.1                | 1140.0      | 8.45                                                            | 1210.1               | 1030.0      | 6.39                                                             |
| 650.1                | 2195.0      | 7.6                                                              | 290.1                | 1160.0      | 8.43                                                            | 1170.1               | 1070.0      | 6.29                                                             |
| 690.1                | 2235.0      | 7.8                                                              | 300.1                | 1170.0      | 8.46                                                            | 1110.1               | 1130.0      | 6.21                                                             |
| 730.1                | 2275.0      | 7.6                                                              | 320.1                | 1190.0      | 8.51                                                            | 1070.1               | 1170.0      | 6.24                                                             |
| 770.1                | 2315.0      | 7.6                                                              | 330.1                | 1200.0      | 8.59                                                            | 1010.1               | 1230.0      | 6.36                                                             |
| 810.1                | 2355.0      | 8.0                                                              | 350.1                | 1220.0      | 8.64                                                            | 970.1                | 1270.0      | 6.45                                                             |
| 850.1                | 2395.0      | 7.7                                                              | 360.1                | 1230.0      | 8.71                                                            | 910.1                | 1330.0      | 6.56                                                             |
| 890.1                | 2435.0      | 8.8                                                              | 380.1                | 1250.0      | 8.74                                                            | 870.1                | 1370.0      | 6.67                                                             |
| 930.1                | 2475.0      | 8.7                                                              | 390.1                | 1260.0      | 8.78                                                            | 810.1                | 1430.0      | 6.83                                                             |
| 970.1                | 2515.0      | 9.3                                                              | 410.1                | 1280.0      | 8.88                                                            | 770.1                | 1470.0      | 6.98                                                             |
| 1010.1               | 2555.0      | 10.5                                                             | 420.1                | 1290.0      | 8.87                                                            | 710.1                | 1530.0      | 7.07                                                             |
| 1050.1               | 2595.0      | 10.1                                                             | 440.1                | 1310.0      | 8.96                                                            | 670.1                | 1570.0      | 7.19                                                             |
| 1070.1               | 2615.0      | 11.0                                                             | 450.1                | 1320.0      | 9.08                                                            | 610.1                | 1630.0      | 7.24                                                             |
| 1110.1               | 2655.0      | 12.5                                                             | 470.1                | 1340.0      | 9.21                                                            | 570.1                | 1670.0      | 7.34                                                             |
| 1130.1               | 2675.0      | 11.9                                                             | 480.1                | 1350.0      | 9.23                                                            | 510.1                | 1730.0      | 7.37                                                             |
| 1170.1               | 2715.0      | 13.1                                                             | 500.1                | 1370.0      | 9.42                                                            | 470.1                | 1770.0      | 7.48                                                             |
| 1190.1               | 2735.0      | 14.0                                                             | 510.1                | 1380.0      | 9.46                                                            | 410.1                | 1830.0      | 7.61                                                             |
| 1230.1               | 2775.0      | 13.5                                                             | 530.1                | 1400.0      | 9.61                                                            | 370.1                | 1870.0      | 7.77                                                             |
| 1250.1               | 2795.0      | 13.3                                                             | 540.1                | 1410.0      | 9.68                                                            | 310.1                | 1930.0      | 8.01                                                             |
| 1290.1               | 2835.0      | 15.2                                                             | 560.1                | 1430.0      | 9.93                                                            | 270.1                | 1970.0      | 8.20                                                             |
| 1310.1               | 2855.0      | 15.2                                                             | 570.1                | 1440.0      | 10.07                                                           | 210.1                | 2030.0      | 8.47                                                             |
| 1350.1               | 2895.0      | 14.0                                                             | 590.1                | 1460.0      | 10.30                                                           | 170.1                | 2070.0      | 8.62                                                             |
| 1370.1               | 2915.0      | 14.8                                                             | 600.1                | 1470.0      | 10.41                                                           | 110.1                | 2130.0      | 8.73                                                             |
| 1410.1               | 2955.0      | 15.4                                                             | 620.1                | 1490.0      | 10.48                                                           | 70.1                 | 2170.0      | 8.77                                                             |
| 1430.1               | 2975.0      | 14.4                                                             | 630.1                | 1500.0      | 10.51                                                           | 10.1                 | 2230.0      | 8.82                                                             |

# Frequency Mixer

ADE-ED7079/1

## Typical Performance Data

| LO<br>(MHz) | LO-RF ISOLATION<br>(dB) |       |       | LO-IF ISOLATION<br>(dB) |       |       |
|-------------|-------------------------|-------|-------|-------------------------|-------|-------|
|             | @LO (dBm)               |       |       | @LO (dBm)               |       |       |
|             | +4                      | +7    | +10   | +4                      | +7    | +10   |
| 490.0       | 47.13                   | 46.42 | 47.27 | 49.31                   | 41.21 | 41.02 |
| 550.0       | 44.38                   | 43.75 | 45.24 | 46.89                   | 39.86 | 40.21 |
| 610.0       | 42.20                   | 42.38 | 44.26 | 42.47                   | 38.93 | 39.74 |
| 670.0       | 40.40                   | 41.28 | 43.33 | 39.98                   | 38.79 | 39.60 |
| 730.0       | 38.88                   | 39.92 | 41.87 | 39.79                   | 39.07 | 39.93 |
| 790.0       | 37.64                   | 39.20 | 41.41 | 39.34                   | 39.79 | 40.42 |
| 850.0       | 36.78                   | 38.39 | 40.58 | 39.66                   | 40.54 | 40.37 |
| 910.0       | 35.82                   | 37.76 | 40.10 | 39.69                   | 41.19 | 40.56 |
| 970.0       | 34.89                   | 36.93 | 38.93 | 39.75                   | 41.36 | 40.44 |
| 1030.0      | 33.96                   | 36.35 | 38.59 | 39.48                   | 40.86 | 39.44 |
| 1090.0      | 33.33                   | 35.65 | 38.01 | 39.04                   | 40.35 | 38.96 |
| 1150.0      | 32.62                   | 34.99 | 37.25 | 38.37                   | 39.29 | 37.94 |
| 1210.0      | 32.06                   | 34.46 | 36.66 | 37.98                   | 38.39 | 36.70 |
| 1270.0      | 31.33                   | 33.77 | 35.92 | 37.50                   | 37.80 | 35.62 |
| 1330.0      | 30.78                   | 33.19 | 35.32 | 36.09                   | 36.34 | 34.47 |
| 1390.0      | 29.83                   | 31.97 | 33.95 | 33.46                   | 33.96 | 33.01 |
| 1450.0      | 29.19                   | 31.57 | 33.35 | 31.75                   | 31.18 | 30.83 |
| 1510.0      | 28.53                   | 31.13 | 33.43 | 30.73                   | 29.72 | 28.92 |
| 1570.0      | 27.68                   | 30.21 | 32.73 | 30.01                   | 28.94 | 27.86 |
| 1630.0      | 27.40                   | 30.00 | 32.62 | 29.21                   | 27.98 | 27.20 |
| 1670.0      | 26.75                   | 29.32 | 31.94 | 28.66                   | 27.41 | 26.74 |
| 1730.0      | 26.68                   | 29.42 | 32.29 | 27.67                   | 26.48 | 26.01 |
| 1770.0      | 26.29                   | 29.11 | 32.10 | 26.89                   | 25.93 | 25.52 |
| 1830.0      | 26.25                   | 29.22 | 32.52 | 25.85                   | 25.21 | 24.72 |
| 1870.0      | 25.83                   | 28.86 | 32.33 | 24.96                   | 24.56 | 24.26 |
| 1930.0      | 26.04                   | 29.39 | 33.45 | 23.72                   | 23.59 | 23.56 |
| 1970.0      | 25.80                   | 29.31 | 33.66 | 22.67                   | 22.96 | 23.16 |
| 2030.0      | 25.88                   | 29.58 | 34.48 | 21.53                   | 22.12 | 22.45 |
| 2070.0      | 25.67                   | 29.70 | 35.04 | 20.64                   | 21.40 | 22.11 |
| 2130.0      | 25.73                   | 30.13 | 36.37 | 19.46                   | 20.44 | 21.37 |
| 2170.0      | 25.31                   | 29.95 | 36.55 | 18.49                   | 19.70 | 20.84 |
| 2230.0      | 24.82                   | 29.69 | 36.27 | 17.53                   | 18.81 | 20.14 |
| 2270.0      | 24.47                   | 29.63 | 36.14 | 16.61                   | 18.09 | 19.56 |
| 2330.0      | 23.43                   | 28.46 | 34.28 | 15.74                   | 17.27 | 18.89 |
| 2370.0      | 22.89                   | 27.83 | 33.17 | 15.00                   | 16.53 | 18.34 |
| 2430.0      | 21.66                   | 25.85 | 30.50 | 14.23                   | 15.63 | 17.51 |
| 2470.0      | 21.41                   | 25.23 | 29.07 | 13.71                   | 15.02 | 16.85 |
| 2530.0      | 20.28                   | 23.54 | 27.02 | 12.96                   | 14.21 | 16.13 |
| 2570.0      | 19.96                   | 22.97 | 26.04 | 12.51                   | 13.76 | 15.64 |
| 2630.0      | 18.85                   | 21.63 | 24.66 | 11.76                   | 13.06 | 15.05 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF-IF ISOLATION<br>(dB) |       |       |
|---------------------|-------------|-------------------------|-------|-------|
|                     |             | @LO (dBm)               |       |       |
|                     |             | +4                      | +7    | +10   |
| 460.0               | 490.0       | 21.12                   | 23.08 | 23.01 |
| 520.0               | 550.0       | 19.91                   | 22.40 | 22.46 |
| 580.0               | 610.0       | 19.66                   | 22.14 | 22.38 |
| 640.0               | 670.0       | 19.73                   | 21.87 | 21.99 |
| 700.0               | 730.0       | 19.10                   | 20.95 | 21.46 |
| 760.0               | 790.0       | 18.72                   | 20.20 | 20.87 |
| 820.0               | 850.0       | 18.30                   | 19.94 | 20.69 |
| 880.0               | 910.0       | 18.23                   | 20.33 | 21.29 |
| 940.0               | 970.0       | 18.67                   | 20.91 | 22.60 |
| 1000.0              | 1030.0      | 19.53                   | 21.43 | 23.05 |
| 1060.0              | 1090.0      | 20.09                   | 21.54 | 22.45 |
| 1120.0              | 1150.0      | 19.71                   | 20.68 | 21.17 |
| 1180.0              | 1210.0      | 18.95                   | 19.55 | 19.83 |
| 1240.0              | 1270.0      | 18.33                   | 18.79 | 18.95 |
| 1300.0              | 1330.0      | 17.62                   | 17.91 | 18.03 |
| 1360.0              | 1390.0      | 16.97                   | 17.13 | 17.31 |
| 1420.0              | 1450.0      | 16.62                   | 16.66 | 16.72 |
| 1480.0              | 1510.0      | 16.42                   | 16.44 | 16.44 |
| 1540.0              | 1570.0      | 16.32                   | 16.38 | 16.36 |
| 1600.0              | 1630.0      | 16.21                   | 16.29 | 16.31 |
| 1640.0              | 1670.0      | 16.32                   | 16.40 | 16.49 |
| 1700.0              | 1730.0      | 16.37                   | 16.56 | 16.73 |
| 1740.0              | 1770.0      | 16.46                   | 16.62 | 16.82 |
| 1800.0              | 1830.0      | 16.65                   | 16.92 | 17.17 |
| 1840.0              | 1870.0      | 16.75                   | 17.03 | 17.25 |
| 1900.0              | 1930.0      | 16.93                   | 17.41 | 17.50 |
| 1940.0              | 1970.0      | 16.94                   | 17.52 | 17.55 |
| 2000.0              | 2030.0      | 16.83                   | 17.46 | 17.41 |
| 2040.0              | 2070.0      | 16.60                   | 17.22 | 17.01 |
| 2100.0              | 2130.0      | 16.18                   | 16.55 | 16.19 |
| 2140.0              | 2170.0      | 15.58                   | 15.83 | 15.41 |
| 2200.0              | 2230.0      | 14.68                   | 14.69 | 14.21 |
| 2240.0              | 2270.0      | 13.89                   | 13.80 | 13.27 |
| 2300.0              | 2330.0      | 12.84                   | 12.70 | 12.31 |
| 2340.0              | 2370.0      | 12.04                   | 11.92 | 11.60 |
| 2400.0              | 2430.0      | 11.26                   | 10.90 | 10.76 |
| 2440.0              | 2470.0      | 10.85                   | 10.28 | 10.16 |
| 2500.0              | 2530.0      | 10.96                   | 9.67  | 9.52  |
| 2540.0              | 2570.0      | 11.02                   | 9.41  | 9.08  |
| 2600.0              | 2630.0      | 11.24                   | 9.23  | 8.55  |

# Frequency Mixer

ADE-ED7079/1

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF VSWR<br>(:1) |       |      | LO<br>(MHz) | LO VSWR<br>(:1) |      |      | IF<br>(OUT)<br>(MHz) | IF VSWR<br>@LO=2230MHz<br>(:1) |      |      |
|---------------------|-------------|-----------------|-------|------|-------------|-----------------|------|------|----------------------|--------------------------------|------|------|
|                     |             | @LO (dBm)       |       |      |             | @LO (dBm)       |      |      |                      | @LO (dBm)                      |      |      |
|                     |             | +4              | +7    | +10  |             | +4              | +7   | +10  |                      | +4                             | +7   | +10  |
| 460.0               | 490.0       | 18.50           | 10.02 | 7.94 | 490.0       | 17.75           | 9.69 | 5.75 | 10.0                 | 4.79                           | 4.02 | 3.48 |
| 520.0               | 550.0       | 14.62           | 8.20  | 6.83 | 550.0       | 18.11           | 8.43 | 5.22 | 30.0                 | 4.80                           | 4.03 | 3.48 |
| 580.0               | 610.0       | 11.03           | 6.97  | 6.17 | 610.0       | 16.11           | 6.61 | 4.79 | 50.0                 | 4.83                           | 4.06 | 3.51 |
| 640.0               | 670.0       | 8.81            | 6.28  | 5.68 | 670.0       | 12.99           | 5.51 | 4.62 | 70.0                 | 4.87                           | 4.09 | 3.53 |
| 700.0               | 730.0       | 7.76            | 5.77  | 5.19 | 730.0       | 11.46           | 5.09 | 4.50 | 90.0                 | 4.79                           | 4.02 | 3.48 |
| 760.0               | 790.0       | 6.53            | 5.28  | 4.88 | 790.0       | 8.43            | 4.55 | 4.48 | 110.0                | 4.78                           | 4.02 | 3.48 |
| 820.0               | 850.0       | 5.65            | 4.72  | 4.41 | 850.0       | 7.00            | 4.30 | 4.51 | 130.0                | 4.79                           | 4.03 | 3.49 |
| 880.0               | 910.0       | 5.23            | 4.52  | 4.23 | 910.0       | 5.87            | 4.08 | 4.56 | 150.0                | 4.77                           | 4.02 | 3.48 |
| 940.0               | 970.0       | 4.68            | 4.17  | 3.86 | 970.0       | 4.93            | 3.93 | 4.61 | 170.0                | 4.70                           | 3.97 | 3.45 |
| 1000.0              | 1030.0      | 4.33            | 3.94  | 3.68 | 1030.0      | 4.38            | 3.88 | 4.66 | 190.0                | 4.67                           | 3.95 | 3.42 |
| 1060.0              | 1090.0      | 3.97            | 3.67  | 3.50 | 1090.0      | 3.90            | 3.86 | 4.80 | 210.0                | 4.66                           | 3.93 | 3.42 |
| 1120.0              | 1150.0      | 3.73            | 3.47  | 3.31 | 1150.0      | 3.57            | 3.85 | 4.92 | 230.0                | 4.62                           | 3.90 | 3.40 |
| 1180.0              | 1210.0      | 3.59            | 3.33  | 3.19 | 1210.0      | 3.35            | 3.89 | 5.10 | 250.0                | 4.60                           | 3.90 | 3.42 |
| 1240.0              | 1270.0      | 3.36            | 3.10  | 2.95 | 1270.0      | 3.19            | 3.86 | 5.13 | 270.0                | 4.54                           | 3.86 | 3.38 |
| 1300.0              | 1330.0      | 3.17            | 2.89  | 2.74 | 1330.0      | 3.15            | 3.99 | 5.38 | 290.0                | 4.44                           | 3.78 | 3.31 |
| 1360.0              | 1390.0      | 2.97            | 2.67  | 2.49 | 1390.0      | 3.14            | 4.01 | 5.38 | 310.0                | 4.39                           | 3.74 | 3.27 |
| 1420.0              | 1450.0      | 2.80            | 2.56  | 2.33 | 1450.0      | 3.21            | 4.17 | 5.56 | 330.0                | 4.39                           | 3.76 | 3.31 |
| 1480.0              | 1510.0      | 2.48            | 2.32  | 2.14 | 1510.0      | 3.34            | 4.43 | 5.89 | 350.0                | 4.34                           | 3.72 | 3.27 |
| 1540.0              | 1570.0      | 2.19            | 2.07  | 1.95 | 1570.0      | 3.33            | 4.44 | 5.87 | 390.0                | 4.21                           | 3.62 | 3.20 |
| 1600.0              | 1630.0      | 1.87            | 1.77  | 1.70 | 1630.0      | 3.55            | 4.77 | 6.28 | 410.0                | 4.14                           | 3.57 | 3.16 |
| 1640.0              | 1670.0      | 1.70            | 1.61  | 1.57 | 1670.0      | 3.53            | 4.72 | 6.19 | 450.0                | 4.01                           | 3.48 | 3.10 |
| 1700.0              | 1730.0      | 1.45            | 1.39  | 1.38 | 1730.0      | 3.82            | 5.07 | 6.58 | 470.0                | 3.95                           | 3.43 | 3.07 |
| 1740.0              | 1770.0      | 1.32            | 1.28  | 1.31 | 1770.0      | 3.86            | 5.09 | 6.53 | 510.0                | 3.79                           | 3.31 | 2.97 |
| 1800.0              | 1830.0      | 1.13            | 1.16  | 1.26 | 1830.0      | 4.18            | 5.42 | 6.89 | 530.0                | 3.76                           | 3.30 | 2.97 |
| 1840.0              | 1870.0      | 1.10            | 1.20  | 1.31 | 1870.0      | 4.26            | 5.46 | 6.86 | 570.0                | 3.57                           | 3.16 | 2.85 |
| 1900.0              | 1930.0      | 1.25            | 1.39  | 1.51 | 1930.0      | 4.63            | 5.81 | 7.14 | 590.0                | 3.54                           | 3.13 | 2.84 |
| 1940.0              | 1970.0      | 1.36            | 1.51  | 1.63 | 1970.0      | 4.78            | 5.89 | 7.17 | 630.0                | 3.40                           | 3.03 | 2.76 |
| 2000.0              | 2030.0      | 1.57            | 1.75  | 1.89 | 2030.0      | 5.17            | 6.19 | 7.38 | 650.0                | 3.34                           | 2.99 | 2.73 |
| 2040.0              | 2070.0      | 1.70            | 1.91  | 2.06 | 2070.0      | 5.42            | 6.35 | 7.47 | 690.0                | 3.20                           | 2.87 | 2.63 |
| 2100.0              | 2130.0      | 1.97            | 2.22  | 2.38 | 2130.0      | 5.89            | 6.63 | 7.63 | 710.0                | 3.18                           | 2.86 | 2.64 |
| 2140.0              | 2170.0      | 2.09            | 2.37  | 2.53 | 2170.0      | 6.21            | 6.78 | 7.70 | 750.0                | 3.06                           | 2.76 | 2.56 |
| 2200.0              | 2230.0      | 2.34            | 2.71  | 2.89 | 2230.0      | 6.78            | 7.02 | 7.73 | 770.0                | 3.00                           | 2.71 | 2.52 |
| 2240.0              | 2270.0      | 2.45            | 2.87  | 3.06 | 2270.0      | 7.25            | 7.25 | 7.90 | 810.0                | 2.89                           | 2.62 | 2.46 |
| 2300.0              | 2330.0      | 2.67            | 3.17  | 3.37 | 2330.0      | 8.08            | 7.63 | 7.94 | 830.0                | 2.84                           | 2.59 | 2.43 |
| 2340.0              | 2370.0      | 2.80            | 3.34  | 3.54 | 2370.0      | 8.81            | 8.01 | 8.20 | 870.0                | 2.76                           | 2.52 | 2.37 |
| 2400.0              | 2430.0      | 3.00            | 3.51  | 3.78 | 2430.0      | 9.74            | 8.60 | 8.35 | 890.0                | 2.70                           | 2.46 | 2.33 |
| 2440.0              | 2470.0      | 3.09            | 3.53  | 3.80 | 2470.0      | 10.25           | 9.13 | 8.64 | 930.0                | 2.62                           | 2.41 | 2.29 |
| 2500.0              | 2530.0      | 3.25            | 3.48  | 3.79 | 2530.0      | 10.82           | 9.69 | 8.95 | 950.0                | 2.58                           | 2.37 | 2.26 |
| 2540.0              | 2570.0      | 3.52            | 3.60  | 3.88 | 2570.0      | 10.62           | 9.85 | 9.13 | 990.0                | 2.51                           | 2.31 | 2.22 |
| 2600.0              | 2630.0      | 3.92            | 3.65  | 3.82 | 2630.0      | 10.56           | 9.96 | 9.33 | 1010.0               | 2.44                           | 2.25 | 2.16 |

## Harmonics Tables

RF HARMONICS ORDER

|        | (-dBm) | (-dBc) |     |     |     |     |     |     |    |     |    |     |
|--------|--------|--------|-----|-----|-----|-----|-----|-----|----|-----|----|-----|
| 0      | -      | -      | 1   | 14  | 12  | 28  | 30  | 30  | 36 | 38  | 33 | 41  |
| 1      | -      | 9      | 0   | 20  | 17  | 32  | 45  | 36  | 56 | 52  | 59 | 40  |
| 2      | 64     | 48     | 44  | 45  | 49  | 55  | 58  | 56  | 60 | 62  | 65 | 61  |
| 3      | 121    | 67     | 68  | 53  | 56  | 54  | 54  | 74  | 81 | 65  | 90 | 85  |
| 4      | 111    | 92     | 102 | 82  | 74  | 82  | 100 | 86  | 86 | 84  | 89 | 88  |
| 5      | 117    | 89     | 89  | 99  | 87  | 85  | 90  | 88  | 86 | 92  | 89 | 108 |
| 6      | 119    | 117    | 93  | 97  | 90  | 89  | 94  | 99  | 89 | 103 | 86 | 86  |
| 7      | 118    | 86     | 92  | 95  | 101 | 90  | 91  | 94  | 88 | 96  | 89 | 107 |
| 8      | 119    | 84     | 106 | 92  | 90  | 91  | 102 | 100 | 84 | 99  | 84 | 97  |
| 9      | 127    | 90     | 89  | 92  | 99  | 105 | 97  | 96  | 88 | 102 | 95 | 94  |
| 10     | 112    | 90     | 95  | 100 | 90  | 85  | 93  | 103 | 90 | 85  | 90 | 91  |
| RF CAL | 0      | 1      | 2   | 3   | 4   | 5   | 6   | 7   | 8  | 9   | 10 |     |

### LO HARMONICS ORDER

Test conditions: RF IN: 1555 MHz; -14.00 dBm.  
LO IN: 1585 MHz; +7.00 dBm  
IF OUT: 30 MHz; -21.3 dBm

RF HARMONICS ORDER

|        | (-dBm) | (-dBc) |     |     |     |     |    |    |     |    |    |    |
|--------|--------|--------|-----|-----|-----|-----|----|----|-----|----|----|----|
| 0      | -      | -      | 10  | 25  | 23  | 40  | 40 | 44 | 51  | 57 | 52 | 70 |
| 1      | -      | 9      | 0   | 22  | 19  | 35  | 48 | 40 | 59  | 58 | 61 | 50 |
| 2      | 64     | 39     | 34  | 35  | 35  | 51  | 46 | 50 | 60  | 57 | 61 | 60 |
| 3      | 121    | 48     | 49  | 36  | 34  | 39  | 39 | 54 | 63  | 51 | 81 | 70 |
| 4      | 111    | 63     | 70  | 64  | 49  | 47  | 56 | 60 | 72  | 62 | 73 | 67 |
| 5      | 117    | 63     | 69  | 84  | 72  | 59  | 51 | 54 | 56  | 80 | 74 | 62 |
| 6      | 119    | 79     | 74  | 80  | 80  | 70  | 63 | 61 | 71  | 92 | 79 | 72 |
| 7      | 118    | 95     | 91  | 81  | 87  | 92  | 82 | 68 | 64  | 85 | 81 | 93 |
| 8      | 119    | 98     | 99  | 99  | 87  | 96  | 96 | 94 | 70  | 70 | 74 | 85 |
| 9      | 127    | 98     | 106 | 120 | 96  | 95  | 98 | 95 | 96  | 83 | 75 | 80 |
| 10     | 112    | 107    | 98  | 98  | 105 | 106 | 93 | 98 | 101 | 93 | 85 | 82 |
| RF CAL | 0      | 1      | 2   | 3   | 4   | 5   | 6  | 7  | 8   | 9  | 10 |    |

### LO HARMONICS ORDER

Test conditions: RF IN: 1555 MHz; -4.00 dBm.  
LO IN: 1585 MHz; +7.00 dBm  
IF OUT: 30 MHz; -11.32 dBm

- Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.  
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.  
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.