

# Frequency Mixer

ADE-ED12873/10

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>IF FIXED<br>@IF(OUT)=30MHz<br>(dB) |       |       |
|---------------------|-------------|-------------------------------------------------------|-------|-------|
|                     |             | @LO (dBm)                                             |       |       |
|                     |             | +7                                                    | +10   | +13   |
| 10.10               | 40.10       | 5.04                                                  | 4.84  | 4.74  |
| 40.10               | 70.10       | 5.36                                                  | 5.13  | 5.02  |
| 70.10               | 100.10      | 5.33                                                  | 5.15  | 5.05  |
| 100.10              | 130.10      | 5.35                                                  | 5.16  | 5.09  |
| 130.10              | 160.10      | 5.40                                                  | 5.22  | 5.14  |
| 160.10              | 190.10      | 5.42                                                  | 5.26  | 5.16  |
| 190.10              | 220.10      | 5.50                                                  | 5.32  | 5.22  |
| 220.10              | 250.10      | 5.51                                                  | 5.34  | 5.23  |
| 250.10              | 280.10      | 5.61                                                  | 5.40  | 5.25  |
| 280.10              | 310.10      | 5.76                                                  | 5.54  | 5.36  |
| 310.10              | 340.10      | 5.81                                                  | 5.61  | 5.43  |
| 340.10              | 370.10      | 5.81                                                  | 5.58  | 5.41  |
| 370.10              | 400.10      | 5.80                                                  | 5.53  | 5.39  |
| 400.10              | 430.10      | 5.97                                                  | 5.61  | 5.46  |
| 430.10              | 460.10      | 6.27                                                  | 5.85  | 5.59  |
| 460.10              | 490.10      | 6.51                                                  | 6.16  | 5.80  |
| 490.10              | 520.10      | 6.66                                                  | 6.33  | 5.99  |
| 520.10              | 550.10      | 6.87                                                  | 6.46  | 6.03  |
| 550.10              | 580.10      | 7.04                                                  | 6.45  | 5.91  |
| 580.10              | 610.10      | 7.03                                                  | 6.33  | 5.86  |
| 610.10              | 640.10      | 6.97                                                  | 6.28  | 5.86  |
| 640.10              | 670.10      | 6.87                                                  | 6.25  | 5.88  |
| 670.10              | 700.10      | 6.80                                                  | 6.29  | 6.00  |
| 700.10              | 730.10      | 6.79                                                  | 6.35  | 6.05  |
| 730.10              | 760.10      | 6.85                                                  | 6.43  | 6.16  |
| 760.10              | 790.10      | 6.96                                                  | 6.59  | 6.37  |
| 780.10              | 810.10      | 7.06                                                  | 6.71  | 6.50  |
| 810.10              | 840.10      | 7.17                                                  | 6.85  | 6.69  |
| 830.10              | 860.10      | 7.34                                                  | 7.04  | 6.92  |
| 860.10              | 890.10      | 7.63                                                  | 7.34  | 7.23  |
| 880.10              | 910.10      | 7.81                                                  | 7.55  | 7.45  |
| 910.10              | 940.10      | 8.27                                                  | 8.00  | 7.89  |
| 930.10              | 960.10      | 8.58                                                  | 8.26  | 8.14  |
| 960.10              | 990.10      | 9.17                                                  | 8.80  | 8.66  |
| 980.10              | 1010.10     | 9.66                                                  | 9.20  | 9.02  |
| 1010.10             | 1040.10     | 10.42                                                 | 9.85  | 9.63  |
| 1030.10             | 1060.10     | 11.01                                                 | 10.38 | 10.11 |
| 1060.10             | 1090.10     | 11.99                                                 | 11.29 | 10.97 |
| 1080.10             | 1110.10     | 12.77                                                 | 11.99 | 11.65 |
| 1110.10             | 1140.10     | 14.17                                                 | 13.20 | 12.90 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | IP3 INPUT<br>(dBm) |       |       |
|---------------------|-------------|--------------------|-------|-------|
|                     |             | @LO (dBm)          |       |       |
|                     |             | +7                 | +10   | +13   |
| 10.10               | 40.10       | 24.96              | 24.08 | 29.62 |
| 40.10               | 70.10       | 25.60              | 25.30 | 25.15 |
| 70.10               | 100.10      | 26.04              | 22.33 | 30.26 |
| 100.10              | 130.10      | 21.62              | 26.46 | 20.35 |
| 130.10              | 160.10      | 20.92              | 22.82 | 18.02 |
| 160.10              | 190.10      | 23.27              | 18.88 | 16.19 |
| 190.10              | 220.10      | 20.27              | 16.27 | 15.01 |
| 220.10              | 250.10      | 20.19              | 15.46 | 15.00 |
| 250.10              | 280.10      | 14.92              | 13.76 | 14.56 |
| 280.10              | 310.10      | 13.22              | 12.17 | 12.67 |
| 310.10              | 340.10      | 15.44              | 14.60 | 14.82 |
| 340.10              | 370.10      | 16.22              | 14.46 | 15.51 |
| 370.10              | 400.10      | 16.04              | 14.78 | 17.43 |
| 400.10              | 430.10      | 14.00              | 14.36 | 16.31 |
| 430.10              | 460.10      | 8.76               | 10.79 | 13.34 |
| 460.10              | 490.10      | 6.92               | 7.56  | 10.04 |
| 490.10              | 520.10      | 6.60               | 6.89  | 8.39  |
| 520.10              | 550.10      | 6.55               | 7.27  | 8.60  |
| 550.10              | 580.10      | 6.84               | 7.87  | 9.86  |
| 580.10              | 610.10      | 7.43               | 8.65  | 11.67 |
| 610.10              | 640.10      | 7.93               | 10.19 | 13.70 |
| 640.10              | 670.10      | 9.47               | 12.98 | 17.48 |
| 670.10              | 700.10      | 11.72              | 16.74 | 22.83 |
| 700.10              | 730.10      | 13.81              | 23.92 | 16.12 |
| 730.10              | 760.10      | 16.02              | 18.72 | 14.30 |
| 760.10              | 790.10      | 15.21              | 17.24 | 15.52 |
| 780.10              | 810.10      | 14.36              | 16.33 | 16.27 |
| 810.10              | 840.10      | 13.02              | 14.65 | 16.29 |
| 830.10              | 860.10      | 12.51              | 14.41 | 16.68 |
| 860.10              | 890.10      | 12.18              | 14.93 | 17.20 |
| 880.10              | 910.10      | 12.18              | 15.72 | 16.95 |
| 910.10              | 940.10      | 12.44              | 15.85 | 16.61 |
| 930.10              | 960.10      | 12.30              | 15.09 | 16.48 |
| 960.10              | 990.10      | 11.96              | 15.53 | 17.00 |
| 980.10              | 1010.10     | 11.74              | 16.06 | 17.08 |
| 1010.10             | 1040.10     | 11.51              | 16.75 | 16.41 |
| 1030.10             | 1060.10     | 11.72              | 17.09 | 15.93 |
| 1060.10             | 1090.10     | 11.58              | 16.47 | 14.14 |
| 1080.10             | 1110.10     | 11.39              | 15.68 | 13.02 |
| 1110.10             | 1140.10     | 10.21              | 13.73 | 10.63 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | COMPRESSION<br>@RF IN=+5dBm<br>(dB) |       |       |
|---------------------|-------------|-------------------------------------|-------|-------|
|                     |             | @LO (dBm)                           |       |       |
|                     |             | +7                                  | +10   | +13   |
| 10.10               | 40.10       | -1.59                               | -1.25 | -1.07 |
| 40.10               | 70.10       | -1.43                               | -1.10 | -0.83 |
| 70.10               | 100.10      | -1.49                               | -1.15 | -0.85 |
| 100.10              | 130.10      | -1.40                               | -1.03 | -0.75 |
| 130.10              | 160.10      | -1.33                               | -1.00 | -0.77 |
| 160.10              | 190.10      | -1.32                               | -1.00 | -0.76 |
| 190.10              | 220.10      | -1.24                               | -0.92 | -0.71 |
| 220.10              | 250.10      | -1.24                               | -0.93 | -0.70 |
| 250.10              | 280.10      | -1.24                               | -0.93 | -0.71 |
| 280.10              | 310.10      | -1.11                               | -0.85 | -0.67 |
| 310.10              | 340.10      | -1.14                               | -0.86 | -0.69 |
| 340.10              | 370.10      | -1.36                               | -1.01 | -0.82 |
| 370.10              | 400.10      | -1.57                               | -1.13 | -0.90 |
| 400.10              | 430.10      | -1.81                               | -1.36 | -1.05 |
| 430.10              | 460.10      | -1.93                               | -1.58 | -1.24 |
| 460.10              | 490.10      | -1.96                               | -1.64 | -1.35 |
| 490.10              | 520.10      | -2.09                               | -1.75 | -1.52 |
| 520.10              | 550.10      | -2.03                               | -1.75 | -1.58 |
| 550.10              | 580.10      | -1.97                               | -1.82 | -1.69 |
| 580.10              | 610.10      | -2.01                               | -1.88 | -1.67 |
| 610.10              | 640.10      | -2.13                               | -1.93 | -1.71 |
| 640.10              | 670.10      | -2.18                               | -1.91 | -1.71 |
| 670.10              | 700.10      | -2.13                               | -1.81 | -1.59 |
| 700.10              | 730.10      | -2.07                               | -1.76 | -1.56 |
| 730.10              | 760.10      | -2.09                               | -1.78 | -1.58 |
| 760.10              | 790.10      | -1.91                               | -1.59 | -1.41 |
| 780.10              | 810.10      | -1.84                               | -1.55 | -1.36 |
| 810.10              | 840.10      | -1.90                               | -1.56 | -1.32 |
| 830.10              | 860.10      | -1.85                               | -1.46 | -1.21 |
| 860.10              | 890.10      | -1.91                               | -1.44 | -1.20 |
| 880.10              | 910.10      | -1.95                               | -1.40 | -1.14 |
| 910.10              | 940.10      | -1.95                               | -1.35 | -1.11 |
| 930.10              | 960.10      | -2.02                               | -1.36 | -1.14 |
| 960.10              | 990.10      | -2.03                               | -1.33 | -1.16 |
| 980.10              | 1010.10     | -2.09                               | -1.38 | -1.20 |
| 1010.10             | 1040.10     | -2.22                               | -1.40 | -1.28 |
| 1030.10             | 1060.10     | -2.36                               | -1.46 | -1.34 |
| 1060.10             | 1090.10     | -2.60                               | -1.56 | -1.46 |
| 1080.10             | 1110.10     | -2.75                               | -1.59 | -1.50 |
| 1110.10             | 1140.10     | -2.83                               | -1.78 | -1.64 |

REV. X2

ADE-ED12873/10

101013

Page 1 of 5



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# Frequency Mixer

ADE-ED12873/10

## Typical Performance Data

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=261.1MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=10.1MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=510.1MHz<br>(dB) |
|----------------------|-------------|-----------------------------------------------------------------|----------------------|-------------|----------------------------------------------------------------|----------------------|-------------|-----------------------------------------------------------------|
|                      |             | @LO (dBm)                                                       |                      |             | @LO (dBm)                                                      |                      |             | @LO (dBm)                                                       |
|                      |             | +10                                                             |                      |             | +10                                                            |                      |             | +10                                                             |
| 240.00               | 21.10       | 5.39                                                            | 10.00                | 20.10       | 5.19                                                           | 500.00               | 10.10       | 6.10                                                            |
| 234.25               | 26.85       | 5.38                                                            | 20.00                | 30.10       | 4.97                                                           | 490.00               | 20.10       | 6.01                                                            |
| 228.50               | 32.60       | 5.34                                                            | 30.00                | 40.10       | 4.89                                                           | 480.00               | 30.10       | 5.98                                                            |
| 222.75               | 38.35       | 5.33                                                            | 40.00                | 50.10       | 4.86                                                           | 470.00               | 40.10       | 5.92                                                            |
| 217.00               | 44.10       | 5.34                                                            | 50.00                | 60.10       | 4.98                                                           | 460.00               | 50.10       | 5.88                                                            |
| 211.25               | 49.85       | 5.29                                                            | 60.00                | 70.10       | 4.85                                                           | 450.00               | 60.10       | 5.87                                                            |
| 205.50               | 55.60       | 5.28                                                            | 70.00                | 80.10       | 4.91                                                           | 440.00               | 70.10       | 5.84                                                            |
| 199.75               | 61.35       | 5.29                                                            | 80.00                | 90.10       | 4.94                                                           | 430.00               | 80.10       | 5.81                                                            |
| 194.00               | 67.10       | 5.25                                                            | 90.00                | 100.10      | 4.86                                                           | 420.00               | 90.10       | 5.83                                                            |
| 188.25               | 72.85       | 5.26                                                            | 100.00               | 110.10      | 4.88                                                           | 410.00               | 100.10      | 5.79                                                            |
| 182.50               | 78.60       | 5.26                                                            | 110.00               | 120.10      | 4.95                                                           | 400.00               | 110.10      | 5.79                                                            |
| 176.75               | 84.35       | 5.25                                                            | 120.00               | 130.10      | 4.86                                                           | 390.00               | 120.10      | 5.81                                                            |
| 171.00               | 90.10       | 5.27                                                            | 130.00               | 140.10      | 4.96                                                           | 380.00               | 130.10      | 5.80                                                            |
| 165.25               | 95.85       | 5.24                                                            | 140.00               | 150.10      | 4.97                                                           | 370.00               | 140.10      | 5.82                                                            |
| 159.50               | 101.60      | 5.24                                                            | 150.00               | 160.10      | 5.01                                                           | 360.00               | 150.10      | 5.82                                                            |
| 153.75               | 107.35      | 5.26                                                            | 160.00               | 170.10      | 5.09                                                           | 350.00               | 160.10      | 5.80                                                            |
| 148.00               | 113.10      | 5.24                                                            | 170.00               | 180.10      | 5.00                                                           | 340.00               | 170.10      | 5.81                                                            |
| 142.25               | 118.85      | 5.26                                                            | 180.00               | 190.10      | 5.12                                                           | 330.00               | 180.10      | 5.82                                                            |
| 136.50               | 124.60      | 5.26                                                            | 190.00               | 200.10      | 5.11                                                           | 320.00               | 190.10      | 5.81                                                            |
| 130.75               | 130.35      | 5.16                                                            | 200.00               | 210.10      | 5.03                                                           | 310.00               | 200.10      | 5.85                                                            |
| 125.00               | 136.10      | 5.25                                                            | 210.00               | 220.10      | 5.10                                                           | 290.00               | 220.10      | 5.85                                                            |
| 119.25               | 141.85      | 5.26                                                            | 220.00               | 230.10      | 5.10                                                           | 280.00               | 230.10      | 5.88                                                            |
| 113.50               | 147.60      | 5.26                                                            | 240.00               | 250.10      | 5.09                                                           | 260.00               | 250.10      | 5.88                                                            |
| 107.75               | 153.35      | 5.29                                                            | 250.00               | 260.10      | 4.99                                                           | 250.00               | 260.10      | 5.91                                                            |
| 102.00               | 159.10      | 5.26                                                            | 270.00               | 280.10      | 5.15                                                           | 230.00               | 280.10      | 5.95                                                            |
| 96.25                | 164.85      | 5.28                                                            | 280.00               | 290.10      | 5.20                                                           | 220.00               | 290.10      | 5.96                                                            |
| 90.50                | 170.60      | 5.31                                                            | 300.00               | 310.10      | 5.33                                                           | 200.00               | 310.10      | 5.99                                                            |
| 84.75                | 176.35      | 5.29                                                            | 310.00               | 320.10      | 5.25                                                           | 190.00               | 320.10      | 5.96                                                            |
| 79.00                | 182.10      | 5.32                                                            | 330.00               | 340.10      | 5.22                                                           | 170.00               | 340.10      | 5.96                                                            |
| 73.25                | 187.85      | 5.32                                                            | 340.00               | 350.10      | 5.27                                                           | 160.00               | 350.10      | 5.92                                                            |
| 67.50                | 193.60      | 5.31                                                            | 360.00               | 370.10      | 5.31                                                           | 140.00               | 370.10      | 5.90                                                            |
| 61.75                | 199.35      | 5.34                                                            | 370.00               | 380.10      | 5.36                                                           | 130.00               | 380.10      | 5.85                                                            |
| 56.00                | 205.10      | 5.32                                                            | 390.00               | 400.10      | 5.20                                                           | 110.00               | 400.10      | 5.79                                                            |
| 50.25                | 210.85      | 5.34                                                            | 400.00               | 410.10      | 5.27                                                           | 100.00               | 410.10      | 5.77                                                            |
| 44.50                | 216.60      | 5.37                                                            | 420.00               | 430.10      | 5.37                                                           | 80.00                | 430.10      | 5.85                                                            |
| 38.75                | 222.35      | 5.34                                                            | 430.00               | 440.10      | 5.32                                                           | 70.00                | 440.10      | 5.90                                                            |
| 33.00                | 228.10      | 5.37                                                            | 450.00               | 460.10      | 5.45                                                           | 50.00                | 460.10      | 6.05                                                            |
| 27.25                | 233.85      | 5.38                                                            | 460.00               | 470.10      | 5.46                                                           | 40.00                | 470.10      | 6.15                                                            |
| 15.75                | 245.35      | 5.46                                                            | 480.00               | 490.10      | 5.46                                                           | 20.00                | 490.10      | 6.32                                                            |
| 10.00                | 251.10      | 5.69                                                            | 490.00               | 500.10      | 5.49                                                           | 10.00                | 500.10      | 6.67                                                            |

# Frequency Mixer

ADE-ED12873/10

## Typical Performance Data

| LO<br>(MHz) | LO-RF ISOLATION<br>(dB) |       |       | LO-IF ISOLATION<br>(dB) |       |       |
|-------------|-------------------------|-------|-------|-------------------------|-------|-------|
|             | @LO (dBm)               |       |       | @LO (dBm)               |       |       |
|             | +7                      | +10   | +13   | +7                      | +10   | +13   |
| 40.10       | 59.97                   | 64.00 | 67.36 | 67.04                   | 68.30 | 69.00 |
| 70.10       | 65.92                   | 66.86 | 66.04 | 59.26                   | 57.64 | 56.26 |
| 100.10      | 62.91                   | 62.91 | 63.17 | 53.98                   | 51.96 | 50.98 |
| 130.10      | 60.41                   | 61.24 | 61.12 | 49.66                   | 48.48 | 47.91 |
| 160.10      | 60.33                   | 61.09 | 61.39 | 46.75                   | 46.09 | 45.88 |
| 190.10      | 57.16                   | 56.92 | 56.86 | 44.84                   | 44.36 | 44.29 |
| 220.10      | 57.69                   | 57.75 | 57.39 | 43.14                   | 42.93 | 42.95 |
| 250.10      | 54.98                   | 55.37 | 55.55 | 41.74                   | 41.60 | 41.60 |
| 280.10      | 53.46                   | 52.90 | 52.65 | 41.36                   | 41.44 | 41.11 |
| 310.10      | 55.14                   | 54.76 | 54.17 | 41.30                   | 41.56 | 40.79 |
| 340.10      | 52.48                   | 52.88 | 53.12 | 39.12                   | 39.02 | 38.45 |
| 370.10      | 48.56                   | 49.28 | 49.88 | 38.58                   | 38.42 | 37.74 |
| 400.10      | 45.96                   | 46.87 | 47.43 | 39.40                   | 38.55 | 36.99 |
| 430.10      | 43.83                   | 44.74 | 45.57 | 39.65                   | 36.99 | 35.05 |
| 460.10      | 42.36                   | 43.07 | 43.74 | 39.34                   | 35.13 | 33.20 |
| 490.10      | 41.68                   | 42.41 | 42.81 | 39.39                   | 34.51 | 31.90 |
| 520.10      | 41.41                   | 42.13 | 42.51 | 36.99                   | 33.73 | 30.68 |
| 550.10      | 41.38                   | 41.78 | 42.07 | 35.35                   | 32.46 | 29.94 |
| 580.10      | 41.24                   | 41.14 | 40.78 | 34.14                   | 31.30 | 28.65 |
| 610.10      | 40.56                   | 39.86 | 38.50 | 33.36                   | 30.04 | 26.50 |
| 640.10      | 40.35                   | 39.01 | 37.55 | 32.98                   | 28.31 | 24.81 |
| 670.10      | 37.97                   | 36.22 | 35.00 | 32.08                   | 26.57 | 23.49 |
| 700.10      | 35.75                   | 34.10 | 33.28 | 30.67                   | 25.18 | 22.68 |
| 730.10      | 34.63                   | 33.46 | 32.80 | 29.74                   | 24.60 | 22.08 |
| 760.10      | 33.44                   | 32.46 | 31.63 | 29.82                   | 24.63 | 21.70 |
| 790.10      | 32.52                   | 31.28 | 30.33 | 30.09                   | 24.33 | 21.44 |
| 810.10      | 32.49                   | 31.03 | 29.98 | 29.40                   | 23.94 | 21.03 |
| 840.10      | 32.12                   | 30.26 | 28.67 | 27.43                   | 23.59 | 20.56 |
| 860.10      | 31.95                   | 29.82 | 27.86 | 25.51                   | 22.90 | 19.89 |
| 890.10      | 31.21                   | 28.40 | 26.28 | 22.97                   | 21.47 | 18.97 |
| 910.10      | 30.43                   | 27.43 | 25.40 | 21.49                   | 20.66 | 18.52 |
| 940.10      | 29.05                   | 26.07 | 24.13 | 19.57                   | 19.65 | 17.96 |
| 960.10      | 27.71                   | 25.13 | 23.22 | 18.36                   | 18.93 | 17.55 |
| 990.10      | 26.09                   | 23.66 | 21.99 | 16.92                   | 17.89 | 16.88 |
| 1010.10     | 24.91                   | 22.88 | 21.27 | 16.14                   | 17.39 | 16.65 |
| 1040.10     | 23.84                   | 21.98 | 20.38 | 15.17                   | 16.68 | 16.23 |
| 1060.10     | 23.16                   | 21.12 | 19.69 | 14.72                   | 16.18 | 16.01 |
| 1090.10     | 22.09                   | 20.48 | 18.91 | 14.03                   | 15.56 | 15.56 |
| 1110.10     | 21.51                   | 19.92 | 18.57 | 13.60                   | 15.04 | 15.28 |
| 1140.10     | 20.65                   | 19.24 | 18.14 | 13.15                   | 14.50 | 15.01 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF-IF ISOLATION<br>(dB) |       |       |
|---------------------|-------------|-------------------------|-------|-------|
|                     |             | @LO (dBm)               |       |       |
|                     |             | +7                      | +10   | +13   |
| 10.10               | 40.10       | 43.98                   | 43.89 | 43.68 |
| 40.10               | 70.10       | 33.39                   | 33.30 | 33.33 |
| 70.10               | 100.10      | 29.09                   | 29.30 | 29.34 |
| 100.10              | 130.10      | 26.72                   | 27.07 | 26.97 |
| 130.10              | 160.10      | 25.25                   | 25.15 | 25.32 |
| 160.10              | 190.10      | 23.94                   | 24.21 | 24.30 |
| 190.10              | 220.10      | 23.60                   | 23.91 | 24.07 |
| 220.10              | 250.10      | 22.91                   | 23.44 | 23.82 |
| 250.10              | 280.10      | 22.50                   | 23.02 | 23.48 |
| 280.10              | 310.10      | 22.50                   | 22.73 | 23.11 |
| 310.10              | 340.10      | 23.11                   | 23.34 | 23.69 |
| 340.10              | 370.10      | 23.76                   | 24.40 | 25.14 |
| 370.10              | 400.10      | 24.08                   | 25.23 | 25.88 |
| 400.10              | 430.10      | 22.71                   | 23.87 | 24.48 |
| 430.10              | 460.10      | 20.70                   | 21.29 | 21.88 |
| 460.10              | 490.10      | 19.23                   | 19.49 | 19.67 |
| 490.10              | 520.10      | 18.15                   | 18.17 | 18.33 |
| 520.10              | 550.10      | 17.34                   | 17.34 | 17.49 |
| 550.10              | 580.10      | 17.01                   | 17.04 | 17.23 |
| 580.10              | 610.10      | 16.99                   | 17.08 | 17.31 |
| 610.10              | 640.10      | 17.18                   | 17.12 | 17.14 |
| 640.10              | 670.10      | 17.02                   | 16.82 | 16.69 |
| 670.10              | 700.10      | 16.44                   | 16.12 | 15.92 |
| 700.10              | 730.10      | 15.58                   | 15.24 | 14.96 |
| 730.10              | 760.10      | 14.70                   | 14.33 | 14.05 |
| 760.10              | 790.10      | 13.77                   | 13.42 | 13.15 |
| 780.10              | 810.10      | 13.13                   | 12.81 | 12.50 |
| 810.10              | 840.10      | 12.26                   | 11.85 | 11.48 |
| 830.10              | 860.10      | 11.61                   | 11.17 | 10.73 |
| 860.10              | 890.10      | 10.62                   | 10.13 | 9.65  |
| 880.10              | 910.10      | 10.06                   | 9.53  | 9.09  |
| 910.10              | 940.10      | 9.15                    | 8.68  | 8.29  |
| 930.10              | 960.10      | 8.64                    | 8.13  | 7.75  |
| 960.10              | 990.10      | 7.80                    | 7.40  | 7.08  |
| 980.10              | 1010.10     | 7.32                    | 7.03  | 6.73  |
| 1010.10             | 1040.10     | 6.70                    | 6.42  | 6.17  |
| 1030.10             | 1060.10     | 6.32                    | 6.03  | 5.81  |
| 1060.10             | 1090.10     | 5.96                    | 5.66  | 5.43  |
| 1080.10             | 1110.10     | 5.65                    | 5.35  | 5.11  |
| 1110.10             | 1140.10     | 5.42                    | 5.07  | 4.85  |

REV. X2

ADE-ED12873/10

101013

Page 3 of 5



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## 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=MHz<br>(:1) |      |      |
|---------------------|-------------|-----------------|------|------|-------------|-----------------|------|------|----------------------|----------------------------|------|------|
|                     |             | @LO (dBm)       |      |      |             | @LO (dBm)       |      |      |                      | @LO (dBm)                  |      |      |
|                     |             | +7              | +10  | +13  |             | +7              | +10  | +13  |                      | +7                         | +10  | +13  |
| 10.10               | 40.10       | 2.07            | 2.10 | 2.18 | 40.10       | 1.25            | 1.64 | 2.11 | 10.10                | 2.19                       | 1.92 | 1.63 |
| 40.10               | 70.10       | 1.37            | 1.29 | 1.26 | 70.10       | 1.51            | 2.18 | 2.99 | 20.10                | 2.22                       | 1.94 | 1.64 |
| 70.10               | 100.10      | 1.14            | 1.08 | 1.08 | 100.10      | 1.59            | 2.31 | 3.19 | 30.10                | 2.23                       | 1.95 | 1.64 |
| 100.10              | 130.10      | 1.32            | 1.22 | 1.16 | 130.10      | 1.45            | 2.09 | 2.84 | 40.10                | 2.21                       | 1.93 | 1.63 |
| 130.10              | 160.10      | 1.18            | 1.10 | 1.07 | 160.10      | 1.50            | 2.17 | 2.97 | 50.10                | 2.22                       | 1.94 | 1.64 |
| 160.10              | 190.10      | 1.19            | 1.11 | 1.06 | 190.10      | 1.57            | 2.27 | 3.11 | 60.10                | 2.25                       | 1.97 | 1.66 |
| 190.10              | 220.10      | 1.23            | 1.14 | 1.09 | 220.10      | 1.53            | 2.19 | 2.96 | 70.10                | 2.28                       | 1.99 | 1.68 |
| 220.10              | 250.10      | 1.11            | 1.05 | 1.05 | 250.10      | 1.57            | 2.25 | 3.04 | 80.10                | 2.29                       | 2.00 | 1.69 |
| 250.10              | 280.10      | 1.18            | 1.09 | 1.03 | 280.10      | 1.65            | 2.33 | 3.15 | 90.10                | 2.30                       | 2.01 | 1.70 |
| 280.10              | 310.10      | 1.16            | 1.10 | 1.08 | 310.10      | 1.65            | 2.31 | 3.09 | 100.10               | 2.30                       | 2.00 | 1.69 |
| 310.10              | 340.10      | 1.07            | 1.01 | 1.05 | 340.10      | 1.68            | 2.36 | 3.16 | 110.10               | 2.28                       | 1.99 | 1.68 |
| 340.10              | 370.10      | 1.07            | 1.06 | 1.10 | 370.10      | 1.76            | 2.46 | 3.28 | 120.10               | 2.27                       | 1.99 | 1.68 |
| 370.10              | 400.10      | 1.23            | 1.29 | 1.34 | 400.10      | 1.78            | 2.44 | 3.24 | 130.10               | 2.26                       | 1.98 | 1.67 |
| 400.10              | 430.10      | 1.06            | 1.17 | 1.23 | 430.10      | 1.84            | 2.50 | 3.30 | 140.10               | 2.25                       | 1.97 | 1.67 |
| 430.10              | 460.10      | 1.14            | 1.03 | 1.06 | 460.10      | 1.99            | 2.65 | 3.47 | 150.10               | 2.27                       | 1.99 | 1.68 |
| 460.10              | 490.10      | 1.14            | 1.10 | 1.13 | 490.10      | 2.05            | 2.73 | 3.52 | 160.10               | 2.29                       | 2.00 | 1.70 |
| 490.10              | 520.10      | 1.15            | 1.07 | 1.01 | 520.10      | 2.09            | 2.80 | 3.61 | 170.10               | 2.28                       | 2.00 | 1.70 |
| 520.10              | 550.10      | 1.29            | 1.21 | 1.13 | 550.10      | 2.16            | 2.89 | 3.73 | 180.10               | 2.30                       | 2.02 | 1.72 |
| 550.10              | 580.10      | 1.23            | 1.13 | 1.03 | 580.10      | 2.17            | 2.88 | 3.70 | 190.10               | 2.31                       | 2.03 | 1.73 |
| 580.10              | 610.10      | 1.38            | 1.28 | 1.25 | 610.10      | 2.20            | 2.91 | 3.73 | 200.10               | 2.28                       | 2.01 | 1.71 |
| 610.10              | 640.10      | 1.46            | 1.36 | 1.30 | 640.10      | 2.26            | 2.98 | 3.82 | 220.10               | 2.26                       | 1.99 | 1.70 |
| 640.10              | 670.10      | 1.49            | 1.43 | 1.41 | 670.10      | 2.26            | 2.95 | 3.78 | 230.10               | 2.24                       | 1.97 | 1.69 |
| 670.10              | 700.10      | 1.73            | 1.69 | 1.67 | 700.10      | 2.29            | 3.00 | 3.83 | 250.10               | 2.30                       | 2.02 | 1.73 |
| 700.10              | 730.10      | 1.73            | 1.69 | 1.67 | 730.10      | 2.40            | 3.14 | 4.01 | 260.10               | 2.27                       | 2.01 | 1.73 |
| 730.10              | 760.10      | 1.93            | 1.91 | 1.89 | 760.10      | 2.46            | 3.16 | 3.99 | 280.10               | 2.28                       | 2.02 | 1.74 |
| 760.10              | 790.10      | 2.08            | 2.05 | 2.02 | 790.10      | 2.54            | 3.21 | 4.00 | 290.10               | 2.26                       | 2.00 | 1.72 |
| 780.10              | 810.10      | 2.05            | 2.02 | 1.99 | 810.10      | 2.67            | 3.34 | 4.14 | 310.10               | 2.25                       | 1.99 | 1.72 |
| 810.10              | 840.10      | 2.25            | 2.22 | 2.20 | 840.10      | 2.88            | 3.50 | 4.29 | 320.10               | 2.23                       | 1.98 | 1.71 |
| 830.10              | 860.10      | 2.43            | 2.35 | 2.30 | 860.10      | 2.95            | 3.51 | 4.23 | 340.10               | 2.27                       | 2.01 | 1.74 |
| 860.10              | 890.10      | 2.21            | 2.10 | 2.04 | 890.10      | 3.10            | 3.59 | 4.25 | 350.10               | 2.25                       | 1.99 | 1.73 |
| 880.10              | 910.10      | 2.15            | 2.06 | 2.02 | 910.10      | 3.31            | 3.78 | 4.42 | 370.10               | 2.23                       | 1.98 | 1.72 |
| 910.10              | 940.10      | 2.54            | 2.42 | 2.37 | 940.10      | 3.62            | 3.97 | 4.54 | 380.10               | 2.22                       | 1.97 | 1.71 |
| 930.10              | 960.10      | 2.58            | 2.42 | 2.35 | 960.10      | 3.67            | 3.95 | 4.44 | 400.10               | 2.20                       | 1.95 | 1.70 |
| 960.10              | 990.10      | 2.35            | 2.20 | 2.15 | 990.10      | 3.79            | 4.00 | 4.42 | 410.10               | 2.19                       | 1.94 | 1.70 |
| 980.10              | 1010.10     | 2.48            | 2.32 | 2.27 | 1010.10     | 4.01            | 4.21 | 4.61 | 430.10               | 2.19                       | 1.94 | 1.69 |
| 1010.10             | 1040.10     | 2.73            | 2.51 | 2.45 | 1040.10     | 4.12            | 4.30 | 4.66 | 440.10               | 2.17                       | 1.93 | 1.69 |
| 1030.10             | 1060.10     | 2.57            | 2.37 | 2.30 | 1060.10     | 3.95            | 4.12 | 4.44 | 460.10               | 2.13                       | 1.89 | 1.65 |
| 1060.10             | 1090.10     | 2.51            | 2.31 | 2.25 | 1090.10     | 3.82            | 4.03 | 4.35 | 470.10               | 2.14                       | 1.90 | 1.66 |
| 1080.10             | 1110.10     | 2.77            | 2.55 | 2.48 | 1110.10     | 3.83            | 4.09 | 4.44 | 490.10               | 2.10                       | 1.87 | 1.64 |
| 1110.10             | 1140.10     | 2.75            | 2.53 | 2.44 | 1140.10     | 3.59            | 3.88 | 4.24 | 500.10               | 2.09                       | 1.87 | 1.64 |

REV. X2

ADE-ED12873/10

101013

Page 4 of 5



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## Harmonics Tables

| RF HARMONICS ORDER                                                                   | (-dBm) |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|
|                                                                                      | (-dBc) |      |      |      |      |      |      |      |      |      |      |      |
| 0                                                                                    | -      | -    | 11   | 27   | 11   | 43   | 17   | 37   | 23   | 48   | 61   | 54   |
| 1                                                                                    | -      | 17   | +0   | 26   | 12   | 32   | 22   | 34   | 43   | 49   | 38   | 63   |
| 2                                                                                    | 86     | 61   | 44   | 67   | 45   | 67   | 44   | 60   | 47   | 64   | 52   | > 75 |
| 3                                                                                    | > 90   | 62   | 55   | 64   | 55   | 70   | 53   | 64   | 60   | 71   | 63   | > 75 |
| 4                                                                                    | > 90   | > 75 | > 75 | > 75 | > 75 | > 75 | > 74 | > 75 | > 72 | > 75 | > 75 | > 75 |
| 5                                                                                    | > 90   | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 |
| 6                                                                                    | > 90   | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 |
| 7                                                                                    | > 90   | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 |
| 8                                                                                    | > 90   | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 73 | > 75 | > 75 |
| 9                                                                                    | > 90   | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 |
| 10                                                                                   | > 90   | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 | > 75 |
| RF CAL      0      1      2      3      4      5      6      7      8      9      10 |        |      |      |      |      |      |      |      |      |      |      |      |

## LO HARMONICS ORDER

Test conditions: RF IN: 250.00 MHz; -10.00 dBm.  
 LO IN: 280.00 MHz; +10.00 dBm  
 IF OUT: 30.00 MHz; -15.39 dBm

| RF HARMONICS ORDER                                                                   | (-dBm) |      |      |      |      |      |      |      |    |      |    |      |
|--------------------------------------------------------------------------------------|--------|------|------|------|------|------|------|------|----|------|----|------|
|                                                                                      | (-dBc) |      |      |      |      |      |      |      |    |      |    |      |
| 0                                                                                    | -      | -    | 19   | 40   | 23   | 50   | 30   | 49   | 38 | 64   | 53 | 78   |
| 1                                                                                    | -      | 18   | +0   | 28   | 12   | 38   | 24   | 40   | 42 | 54   | 50 | 65   |
| 2                                                                                    | 64     | 52   | 38   | 68   | 40   | 55   | 42   | 52   | 43 | 70   | 49 | 84   |
| 3                                                                                    | > 90   | 41   | 39   | 45   | 40   | 47   | 39   | 43   | 45 | 50   | 57 | 60   |
| 4                                                                                    | > 90   | 70   | 60   | 64   | 57   | 63   | 55   | 62   | 51 | 61   | 56 | 69   |
| 5                                                                                    | > 90   | 69   | 66   | 63   | 49   | 68   | 48   | 71   | 48 | 65   | 60 | 70   |
| 6                                                                                    | > 90   | 79   | 68   | 78   | 68   | 78   | 67   | 81   | 65 | 69   | 74 | 71   |
| 7                                                                                    | > 90   | 83   | 78   | 82   | 77   | 71   | 67   | 72   | 63 | 68   | 58 | 68   |
| 8                                                                                    | > 90   | > 85 | 83   | > 85 | 81   | > 85 | 81   | 82   | 74 | 74   | 71 | 80   |
| 9                                                                                    | > 90   | > 85 | > 85 | > 85 | 81   | 83   | 78   | > 85 | 77 | > 85 | 72 | 84   |
| 10                                                                                   | > 90   | > 85 | > 85 | > 85 | > 85 | > 85 | > 85 | > 85 | 83 | > 85 | 83 | > 85 |
| RF CAL      0      1      2      3      4      5      6      7      8      9      10 |        |      |      |      |      |      |      |      |    |      |    |      |

## LO HARMONICS ORDER

Test conditions: RF IN: 250.00 MHz; .00 dBm.  
 LO IN: 280.00 MHz; +10.00 dBm  
 IF OUT: 30.00 MHz; -5.43 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.