

# Frequency Mixer

LAVI-ED13017/1

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>IF FIXED<br>@IF(OUT)=540MHz<br>(dB) |       |       |
|---------------------|-------------|--------------------------------------------------------|-------|-------|
|                     |             | @LO (dBm)                                              |       |       |
|                     |             | +21                                                    | +22   | +23   |
| 10.1                | 550.1       | 11.93                                                  | 11.52 | 11.10 |
| 110.1               | 650.1       | 9.14                                                   | 8.67  | 8.32  |
| 210.1               | 750.1       | 8.73                                                   | 8.31  | 8.04  |
| 310.1               | 850.1       | 8.44                                                   | 8.22  | 8.03  |
| 410.1               | 950.1       | 7.92                                                   | 7.76  | 7.64  |
| 510.1               | 1050.1      | 7.48                                                   | 7.36  | 7.26  |
| 610.1               | 1150.1      | 7.25                                                   | 7.16  | 7.13  |
| 710.1               | 1250.1      | 7.02                                                   | 6.92  | 6.83  |
| 810.1               | 1350.1      | 8.20                                                   | 8.15  | 8.08  |
| 910.1               | 1450.1      | 8.31                                                   | 8.27  | 8.23  |
| 1010.1              | 1550.1      | 7.99                                                   | 7.96  | 7.93  |
| 1110.1              | 1650.1      | 7.75                                                   | 7.72  | 7.69  |
| 1210.1              | 1750.1      | 7.52                                                   | 7.49  | 7.45  |
| 1310.1              | 1850.1      | 7.49                                                   | 7.44  | 7.41  |
| 1410.1              | 1950.1      | 7.58                                                   | 7.54  | 7.50  |
| 1510.1              | 2050.1      | 7.63                                                   | 7.60  | 7.55  |
| 1610.1              | 2150.1      | 7.62                                                   | 7.58  | 7.53  |
| 1710.1              | 2250.1      | 7.55                                                   | 7.51  | 7.46  |
| 1810.1              | 2350.1      | 7.51                                                   | 7.45  | 7.40  |
| 1910.1              | 2450.1      | 7.48                                                   | 7.44  | 7.38  |
| 2010.1              | 2550.1      | 7.42                                                   | 7.37  | 7.31  |
| 2110.1              | 2650.1      | 7.41                                                   | 7.35  | 7.28  |
| 2210.1              | 2750.1      | 7.42                                                   | 7.37  | 7.30  |
| 2310.1              | 2850.1      | 7.47                                                   | 7.41  | 7.36  |
| 2410.1              | 2950.1      | 7.55                                                   | 7.50  | 7.45  |
| 2510.1              | 3050.1      | 7.65                                                   | 7.62  | 7.56  |
| 2610.1              | 3150.1      | 7.66                                                   | 7.62  | 7.57  |
| 2710.1              | 3250.1      | 7.68                                                   | 7.65  | 7.62  |
| 2810.1              | 3350.1      | 7.82                                                   | 7.79  | 7.75  |
| 2910.1              | 3450.1      | 8.03                                                   | 8.01  | 7.99  |
| 3010.1              | 3550.1      | 8.30                                                   | 8.30  | 8.28  |
| 3110.1              | 3650.1      | 8.63                                                   | 8.64  | 8.63  |
| 3210.1              | 3750.1      | 8.96                                                   | 8.98  | 8.97  |
| 3310.1              | 3850.1      | 9.25                                                   | 9.26  | 9.24  |
| 3390.1              | 3930.1      | 9.53                                                   | 9.54  | 9.52  |
| 3490.1              | 4030.1      | 9.81                                                   | 9.82  | 9.80  |
| 3570.1              | 4110.1      | 10.10                                                  | 10.11 | 10.09 |
| 3670.1              | 4210.1      | 10.39                                                  | 10.40 | 10.39 |
| 3750.1              | 4290.1      | 10.62                                                  | 10.63 | 10.63 |
| 3850.1              | 4390.1      | 10.90                                                  | 10.91 | 10.91 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | IP3 INPUT<br>(dBm) |       |       |
|---------------------|-------------|--------------------|-------|-------|
|                     |             | @LO (dBm)          |       |       |
|                     |             | +21                | +22   | +23   |
| 10.1                | 550.1       | 11.45              | 11.88 | 12.35 |
| 110.1               | 650.1       | 11.35              | 11.76 | 12.16 |
| 210.1               | 750.1       | 11.21              | 11.78 | 12.51 |
| 310.1               | 850.1       | 12.64              | 13.58 | 14.65 |
| 410.1               | 950.1       | 17.50              | 18.49 | 19.35 |
| 510.1               | 1050.1      | 19.25              | 20.12 | 20.91 |
| 610.1               | 1150.1      | 20.83              | 21.76 | 22.71 |
| 710.1               | 1250.1      | 22.34              | 23.24 | 24.17 |
| 810.1               | 1350.1      | 21.30              | 22.13 | 23.54 |
| 910.1               | 1450.1      | 25.59              | 26.65 | 27.55 |
| 1010.1              | 1550.1      | 27.29              | 28.40 | 29.42 |
| 1110.1              | 1650.1      | 28.71              | 29.84 | 31.20 |
| 1210.1              | 1750.1      | 29.67              | 30.54 | 31.69 |
| 1310.1              | 1850.1      | 30.33              | 31.64 | 32.23 |
| 1410.1              | 1950.1      | 32.09              | 33.11 | 33.83 |
| 1510.1              | 2050.1      | 33.46              | 34.00 | 35.60 |
| 1610.1              | 2150.1      | 32.92              | 33.67 | 34.69 |
| 1710.1              | 2250.1      | 32.79              | 33.67 | 34.40 |
| 1810.1              | 2350.1      | 32.97              | 33.74 | 34.70 |
| 1910.1              | 2450.1      | 33.64              | 34.35 | 35.14 |
| 2010.1              | 2550.1      | 33.64              | 34.60 | 35.66 |
| 2110.1              | 2650.1      | 33.68              | 34.98 | 35.97 |
| 2210.1              | 2750.1      | 34.07              | 35.43 | 36.93 |
| 2310.1              | 2850.1      | 34.07              | 35.44 | 36.89 |
| 2410.1              | 2950.1      | 33.63              | 35.38 | 36.57 |
| 2510.1              | 3050.1      | 33.36              | 34.73 | 35.63 |
| 2610.1              | 3150.1      | 32.56              | 33.95 | 35.30 |
| 2710.1              | 3250.1      | 32.26              | 33.54 | 34.13 |
| 2810.1              | 3350.1      | 31.52              | 33.21 | 34.55 |
| 2910.1              | 3450.1      | 30.81              | 32.55 | 33.32 |
| 3010.1              | 3550.1      | 30.24              | 32.00 | 33.56 |
| 3110.1              | 3650.1      | 29.72              | 30.98 | 32.85 |
| 3210.1              | 3750.1      | 28.99              | 30.40 | 31.82 |
| 3310.1              | 3850.1      | 28.21              | 29.25 | 30.39 |
| 3390.1              | 3930.1      | 27.84              | 28.73 | 29.80 |
| 3490.1              | 4030.1      | 27.51              | 28.27 | 29.32 |
| 3570.1              | 4110.1      | 27.54              | 28.34 | 29.14 |
| 3670.1              | 4210.1      | 27.53              | 28.26 | 29.12 |
| 3750.1              | 4290.1      | 27.41              | 28.22 | 28.94 |
| 3850.1              | 4390.1      | 27.75              | 28.58 | 28.72 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | COMPRESSION<br>@RF IN=+20dBm<br>(dB) |       |       |
|---------------------|-------------|--------------------------------------|-------|-------|
|                     |             | @LO (dBm)                            |       |       |
|                     |             | +21                                  | +22   | +23   |
| 10.1                | 550.1       | 9.34                                 | 9.24  | 8.94  |
| 110.1               | 650.1       | 9.24                                 | 9.09  | 8.96  |
| 210.1               | 750.1       | 11.07                                | 10.90 | 10.69 |
| 310.1               | 850.1       | 10.08                                | 9.66  | 9.15  |
| 410.1               | 950.1       | 6.72                                 | 6.07  | 5.44  |
| 510.1               | 1050.1      | 5.72                                 | 5.14  | 4.57  |
| 610.1               | 1150.1      | 4.71                                 | 4.02  | 3.44  |
| 710.1               | 1250.1      | 4.01                                 | 3.43  | 2.85  |
| 810.1               | 1350.1      | 2.87                                 | 2.54  | 2.23  |
| 910.1               | 1450.1      | 2.47                                 | 2.09  | 1.76  |
| 1010.1              | 1550.1      | 1.70                                 | 1.33  | 1.03  |
| 1110.1              | 1650.1      | 1.11                                 | 0.83  | 0.58  |
| 1210.1              | 1750.1      | 0.76                                 | 0.58  | 0.42  |
| 1310.1              | 1850.1      | 0.57                                 | 0.41  | 0.32  |
| 1410.1              | 1950.1      | 0.39                                 | 0.28  | 0.21  |
| 1510.1              | 2050.1      | 0.27                                 | 0.21  | 0.15  |
| 1610.1              | 2150.1      | 0.25                                 | 0.19  | 0.14  |
| 1710.1              | 2250.1      | 0.27                                 | 0.19  | 0.15  |
| 1810.1              | 2350.1      | 0.26                                 | 0.19  | 0.15  |
| 1910.1              | 2450.1      | 0.29                                 | 0.22  | 0.17  |
| 2010.1              | 2550.1      | 0.36                                 | 0.27  | 0.21  |
| 2110.1              | 2650.1      | 0.37                                 | 0.29  | 0.23  |
| 2210.1              | 2750.1      | 0.41                                 | 0.31  | 0.23  |
| 2310.1              | 2850.1      | 0.43                                 | 0.31  | 0.24  |
| 2410.1              | 2950.1      | 0.46                                 | 0.34  | 0.26  |
| 2510.1              | 3050.1      | 0.47                                 | 0.36  | 0.27  |
| 2610.1              | 3150.1      | 0.56                                 | 0.42  | 0.32  |
| 2710.1              | 3250.1      | 0.60                                 | 0.45  | 0.39  |
| 2810.1              | 3350.1      | 0.56                                 | 0.44  | 0.34  |
| 2910.1              | 3450.1      | 0.63                                 | 0.47  | 0.39  |
| 3010.1              | 3550.1      | 0.68                                 | 0.50  | 0.38  |
| 3110.1              | 3650.1      | 0.65                                 | 0.49  | 0.36  |
| 3210.1              | 3750.1      | 0.65                                 | 0.47  | 0.36  |
| 3310.1              | 3850.1      | 0.75                                 | 0.57  | 0.43  |
| 3390.1              | 3930.1      | 0.93                                 | 0.71  | 0.54  |
| 3490.1              | 4030.1      | 1.00                                 | 0.76  | 0.58  |
| 3570.1              | 4110.1      | 1.04                                 | 0.78  | 0.59  |
| 3670.1              | 4210.1      | 1.12                                 | 0.85  | 0.61  |
| 3750.1              | 4290.1      | 1.13                                 | 0.85  | 0.61  |
| 3850.1              | 4390.1      | 1.10                                 | 0.82  | 0.78  |

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# Frequency Mixer

LAVI-ED13017/1

## Typical Performance Data

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=2200.1001MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=1400.1MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=3000.1001MHz<br>(dB) |
|----------------------|-------------|---------------------------------------------------------------------|----------------------|-------------|------------------------------------------------------------------|----------------------|-------------|---------------------------------------------------------------------|
|                      |             | @LO (dBm)                                                           |                      |             | @LO (dBm)                                                        |                      |             | @LO (dBm)                                                           |
|                      |             | +22                                                                 |                      |             | +22                                                              |                      |             | +22                                                                 |
| 1530.0               | 670.1       | 10.52                                                               | 10.0                 | 1410.1      | 15.86                                                            | 2430.0               | 570.1       | 10.86                                                               |
| 1447.4               | 752.7       | 10.16                                                               | 90.0                 | 1490.1      | 8.40                                                             | 2370.0               | 630.1       | 10.43                                                               |
| 1364.8               | 835.3       | 9.92                                                                | 170.0                | 1570.1      | 8.02                                                             | 2310.0               | 690.1       | 10.05                                                               |
| 1282.2               | 917.9       | 9.57                                                                | 250.0                | 1650.1      | 8.03                                                             | 2250.0               | 750.1       | 9.68                                                                |
| 1199.6               | 1000.5      | 9.25                                                                | 330.0                | 1730.1      | 8.19                                                             | 2190.0               | 810.1       | 9.59                                                                |
| 1117.0               | 1083.1      | 8.89                                                                | 410.0                | 1810.1      | 7.87                                                             | 2130.0               | 870.1       | 9.31                                                                |
| 1034.3               | 1165.8      | 8.65                                                                | 490.0                | 1890.1      | 7.61                                                             | 2070.0               | 930.1       | 9.16                                                                |
| 951.7                | 1248.4      | 8.50                                                                | 570.0                | 1970.1      | 7.45                                                             | 2010.0               | 990.1       | 9.13                                                                |
| 869.1                | 1331.0      | 8.53                                                                | 650.0                | 2050.1      | 7.30                                                             | 1950.0               | 1050.1      | 8.86                                                                |
| 786.5                | 1413.6      | 8.24                                                                | 730.0                | 2130.1      | 7.19                                                             | 1890.0               | 1110.1      | 8.82                                                                |
| 703.9                | 1496.2      | 7.95                                                                | 810.0                | 2210.1      | 7.08                                                             | 1830.0               | 1170.1      | 8.58                                                                |
| 621.3                | 1578.8      | 7.90                                                                | 890.0                | 2290.1      | 6.99                                                             | 1770.0               | 1230.1      | 8.47                                                                |
| 538.7                | 1661.4      | 7.99                                                                | 970.0                | 2370.1      | 7.08                                                             | 1710.0               | 1290.1      | 8.38                                                                |
| 456.1                | 1744.0      | 8.15                                                                | 1050.0               | 2450.1      | 7.29                                                             | 1650.0               | 1350.1      | 9.40                                                                |
| 373.5                | 1826.6      | 8.47                                                                | 1130.0               | 2530.1      | 7.47                                                             | 1590.0               | 1410.1      | 8.96                                                                |
| 290.9                | 1909.2      | 8.46                                                                | 1210.0               | 2610.1      | 7.52                                                             | 1530.0               | 1470.1      | 8.73                                                                |
| 208.3                | 1991.8      | 8.05                                                                | 1290.0               | 2690.1      | 7.48                                                             | 1470.0               | 1530.1      | 8.54                                                                |
| 125.7                | 2074.4      | 8.00                                                                | 1370.0               | 2770.1      | 7.46                                                             | 1410.0               | 1590.1      | 8.33                                                                |
| 43.0                 | 2157.1      | 8.87                                                                | 1450.0               | 2850.1      | 7.46                                                             | 1350.0               | 1650.1      | 8.37                                                                |
| 57.4                 | 2257.5      | 8.48                                                                | 1530.0               | 2930.1      | 7.56                                                             | 1290.0               | 1710.1      | 8.33                                                                |
| 152.2                | 2352.3      | 7.76                                                                | 1610.0               | 3010.1      | 7.69                                                             | 1230.0               | 1770.1      | 8.33                                                                |
| 270.7                | 2470.8      | 7.78                                                                | 1690.0               | 3090.1      | 7.78                                                             | 1170.0               | 1830.1      | 8.28                                                                |
| 365.4                | 2565.5      | 7.80                                                                | 1770.0               | 3170.1      | 7.95                                                             | 1110.0               | 1890.1      | 8.27                                                                |
| 483.9                | 2684.0      | 7.36                                                                | 1850.0               | 3250.1      | 8.06                                                             | 1050.0               | 1950.1      | 8.24                                                                |
| 578.7                | 2778.8      | 7.31                                                                | 1930.0               | 3330.1      | 8.22                                                             | 990.0                | 2010.1      | 8.25                                                                |
| 697.2                | 2897.3      | 7.43                                                                | 2010.0               | 3410.1      | 8.28                                                             | 930.0                | 2070.1      | 8.28                                                                |
| 792.0                | 2992.1      | 7.50                                                                | 2090.0               | 3490.1      | 8.34                                                             | 870.0                | 2130.1      | 8.18                                                                |
| 910.4                | 3110.5      | 7.59                                                                | 2150.0               | 3550.1      | 8.34                                                             | 810.0                | 2190.1      | 8.26                                                                |
| 1005.2               | 3205.3      | 7.64                                                                | 2230.0               | 3630.1      | 8.45                                                             | 750.0                | 2250.1      | 8.31                                                                |
| 1123.7               | 3323.8      | 7.77                                                                | 2290.0               | 3690.1      | 8.55                                                             | 690.0                | 2310.1      | 8.45                                                                |
| 1218.5               | 3418.6      | 7.87                                                                | 2370.0               | 3770.1      | 8.72                                                             | 630.0                | 2370.1      | 8.57                                                                |
| 1337.0               | 3537.1      | 7.94                                                                | 2430.0               | 3830.1      | 8.80                                                             | 570.0                | 2430.1      | 8.68                                                                |
| 1431.7               | 3631.8      | 7.95                                                                | 2510.0               | 3910.1      | 8.94                                                             | 490.0                | 2510.1      | 8.82                                                                |
| 1550.2               | 3750.3      | 7.97                                                                | 2570.0               | 3970.1      | 9.07                                                             | 430.0                | 2570.1      | 8.88                                                                |
| 1645.0               | 3845.1      | 8.00                                                                | 2650.0               | 4050.1      | 9.33                                                             | 350.0                | 2650.1      | 9.12                                                                |
| 1763.5               | 3963.6      | 7.99                                                                | 2710.0               | 4110.1      | 9.47                                                             | 290.0                | 2710.1      | 8.83                                                                |
| 1858.3               | 4058.4      | 8.01                                                                | 2790.0               | 4190.1      | 9.76                                                             | 210.0                | 2790.1      | 8.23                                                                |
| 1976.7               | 4176.8      | 8.30                                                                | 2850.0               | 4250.1      | 10.03                                                            | 150.0                | 2850.1      | 7.93                                                                |
| 2071.5               | 4271.6      | 8.62                                                                | 2930.0               | 4330.1      | 10.56                                                            | 70.0                 | 2930.1      | 8.23                                                                |
| 2190.0               | 4390.1      | 9.20                                                                | 2990.0               | 4390.1      | 11.05                                                            | 10.0                 | 2990.1      | 16.50                                                               |

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# Frequency Mixer

LAVI-ED13017/1

## Typical Performance Data

| LO<br>(MHz) | LO-RF ISOLATION<br>(dB) |       |       | LO-IF ISOLATION<br>(dB) |       |       |
|-------------|-------------------------|-------|-------|-------------------------|-------|-------|
|             | @LO (dBm)               |       |       | @LO (dBm)               |       |       |
|             | +21                     | +22   | +23   | +21                     | +22   | +23   |
| 550.1       | 58.48                   | 58.55 | 58.73 | 58.52                   | 58.95 | 59.22 |
| 650.1       | 59.19                   | 59.23 | 59.30 | 60.00                   | 60.34 | 60.89 |
| 750.1       | 59.39                   | 59.33 | 59.30 | 60.09                   | 60.40 | 60.98 |
| 850.1       | 59.74                   | 59.88 | 59.99 | 59.85                   | 60.43 | 61.36 |
| 950.1       | 59.91                   | 60.11 | 60.18 | 58.35                   | 58.75 | 59.37 |
| 1050.1      | 57.82                   | 57.68 | 57.44 | 56.24                   | 56.48 | 56.92 |
| 1150.1      | 54.89                   | 54.47 | 53.66 | 55.05                   | 55.31 | 55.72 |
| 1250.1      | 51.69                   | 51.35 | 51.01 | 65.10                   | 63.46 | 61.89 |
| 1350.1      | 45.58                   | 45.69 | 46.11 | 51.48                   | 51.78 | 52.11 |
| 1450.1      | 46.85                   | 46.98 | 47.10 | 48.70                   | 48.93 | 49.23 |
| 1550.1      | 47.23                   | 47.35 | 47.51 | 49.10                   | 49.36 | 49.76 |
| 1650.1      | 48.12                   | 48.51 | 49.09 | 52.66                   | 52.95 | 53.14 |
| 1750.1      | 50.05                   | 50.52 | 51.06 | 49.98                   | 50.48 | 50.98 |
| 1850.1      | 50.61                   | 50.69 | 50.88 | 47.90                   | 48.36 | 48.97 |
| 1950.1      | 49.71                   | 49.65 | 49.76 | 45.37                   | 45.56 | 45.70 |
| 2050.1      | 47.51                   | 47.53 | 47.64 | 42.43                   | 42.48 | 42.46 |
| 2150.1      | 45.41                   | 45.39 | 45.23 | 42.31                   | 42.37 | 42.14 |
| 2250.1      | 42.75                   | 42.57 | 42.68 | 43.47                   | 43.43 | 43.50 |
| 2350.1      | 44.84                   | 44.99 | 45.00 | 40.41                   | 40.39 | 40.31 |
| 2450.1      | 48.07                   | 48.12 | 48.15 | 36.46                   | 36.42 | 36.38 |
| 2550.1      | 48.90                   | 48.52 | 47.89 | 33.81                   | 33.71 | 33.43 |
| 2650.1      | 47.45                   | 47.23 | 46.89 | 30.77                   | 30.57 | 30.15 |
| 2750.1      | 46.64                   | 46.52 | 46.49 | 27.74                   | 27.47 | 27.01 |
| 2850.1      | 44.17                   | 43.88 | 43.69 | 26.12                   | 25.69 | 25.38 |
| 2950.1      | 42.60                   | 42.43 | 42.31 | 25.56                   | 25.27 | 25.06 |
| 3050.1      | 44.34                   | 44.14 | 43.83 | 26.49                   | 26.22 | 25.86 |
| 3150.1      | 47.81                   | 47.70 | 47.46 | 27.32                   | 27.07 | 26.79 |
| 3250.1      | 49.64                   | 49.66 | 49.77 | 28.08                   | 28.02 | 27.95 |
| 3350.1      | 49.59                   | 49.54 | 49.76 | 29.59                   | 29.40 | 29.34 |
| 3450.1      | 49.62                   | 49.84 | 50.03 | 31.02                   | 30.98 | 30.90 |
| 3550.1      | 50.92                   | 51.14 | 51.36 | 33.20                   | 33.22 | 33.17 |
| 3650.1      | 53.56                   | 53.72 | 54.13 | 35.65                   | 35.68 | 35.64 |
| 3750.1      | 55.94                   | 56.06 | 56.78 | 38.29                   | 38.21 | 38.17 |
| 3850.1      | 60.00                   | 60.54 | 61.56 | 41.27                   | 41.18 | 40.98 |
| 3930.1      | 58.38                   | 58.60 | 58.77 | 44.12                   | 44.10 | 43.66 |
| 4030.1      | 53.68                   | 53.67 | 53.47 | 48.21                   | 48.08 | 47.63 |
| 4110.1      | 50.35                   | 50.35 | 50.13 | 51.42                   | 51.09 | 50.53 |
| 4210.1      | 47.54                   | 47.37 | 47.21 | 50.79                   | 50.82 | 50.68 |
| 4290.1      | 46.35                   | 46.17 | 45.91 | 47.66                   | 47.75 | 47.81 |
| 4390.1      | 43.69                   | 43.47 | 43.44 | 46.00                   | 46.06 | 46.12 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF-IF ISOLATION<br>(dB) |       |       |
|---------------------|-------------|-------------------------|-------|-------|
|                     |             | @LO (dBm)               |       |       |
|                     |             | +21                     | +22   | +23   |
| 10.1                | 550.1       | 17.19                   | 17.00 | 16.75 |
| 110.1               | 650.1       | 21.08                   | 21.18 | 21.17 |
| 210.1               | 750.1       | 23.35                   | 23.81 | 24.24 |
| 310.1               | 850.1       | 24.98                   | 25.15 | 25.26 |
| 410.1               | 950.1       | 30.12                   | 29.45 | 28.58 |
| 510.1               | 1050.1      | 80.24                   | 62.40 | 52.64 |
| 610.1               | 1150.1      | 34.42                   | 31.40 | 28.03 |
| 710.1               | 1250.1      | 44.62                   | 45.20 | 47.13 |
| 810.1               | 1350.1      | 25.93                   | 24.09 | 21.42 |
| 910.1               | 1450.1      | 28.82                   | 27.96 | 26.99 |
| 1010.1              | 1550.1      | 29.89                   | 29.04 | 28.01 |
| 1110.1              | 1650.1      | 30.38                   | 29.18 | 27.08 |
| 1210.1              | 1750.1      | 34.89                   | 34.15 | 33.13 |
| 1310.1              | 1850.1      | 35.39                   | 34.22 | 32.25 |
| 1410.1              | 1950.1      | 37.55                   | 37.25 | 36.83 |
| 1510.1              | 2050.1      | 38.61                   | 38.70 | 38.66 |
| 1610.1              | 2150.1      | 38.84                   | 39.06 | 39.27 |
| 1710.1              | 2250.1      | 38.62                   | 38.95 | 39.25 |
| 1810.1              | 2350.1      | 38.83                   | 39.15 | 39.39 |
| 1910.1              | 2450.1      | 37.66                   | 38.03 | 38.51 |
| 2010.1              | 2550.1      | 36.59                   | 36.77 | 36.92 |
| 2110.1              | 2650.1      | 36.33                   | 36.46 | 36.52 |
| 2210.1              | 2750.1      | 36.04                   | 35.90 | 35.31 |
| 2310.1              | 2850.1      | 35.18                   | 34.97 | 34.84 |
| 2410.1              | 2950.1      | 32.70                   | 32.34 | 31.68 |
| 2510.1              | 3050.1      | 33.46                   | 33.39 | 33.18 |
| 2610.1              | 3150.1      | 35.90                   | 35.93 | 35.99 |
| 2710.1              | 3250.1      | 36.27                   | 35.56 | 35.23 |
| 2810.1              | 3350.1      | 35.92                   | 36.17 | 36.49 |
| 2910.1              | 3450.1      | 36.43                   | 36.06 | 35.73 |
| 3010.1              | 3550.1      | 39.02                   | 39.26 | 39.49 |
| 3110.1              | 3650.1      | 45.37                   | 46.17 | 46.95 |
| 3210.1              | 3750.1      | 54.85                   | 52.31 | 50.28 |
| 3310.1              | 3850.1      | 44.17                   | 43.02 | 42.00 |
| 3390.1              | 3930.1      | 41.61                   | 40.76 | 40.05 |
| 3490.1              | 4030.1      | 40.76                   | 40.09 | 39.47 |
| 3570.1              | 4110.1      | 40.93                   | 40.38 | 39.82 |
| 3670.1              | 4210.1      | 40.94                   | 40.53 | 40.15 |
| 3750.1              | 4290.1      | 40.52                   | 40.20 | 39.86 |
| 3850.1              | 4390.1      | 39.89                   | 39.62 | 39.58 |

# Frequency Mixer

LAVI-ED13017/1

## 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=3540MHz<br>(:1) |       |       |
|---------------------|-------------|-----------------|------|------|-------------|-----------------|------|------|----------------------|--------------------------------|-------|-------|
|                     |             | @LO (dBm)       |      |      |             | @LO (dBm)       |      |      |                      | @LO (dBm)                      |       |       |
|                     |             | +21             | +22  | +23  |             | +21             | +22  | +23  |                      | +21                            | +22   | +23   |
| 10.1                | 550.1       | 1.68            | 1.72 | 1.78 | 550.1       | 4.42            | 4.42 | 4.41 | 10.0                 | 10.56                          | 10.62 | 10.62 |
| 110.1               | 650.1       | 1.19            | 1.15 | 1.12 | 650.1       | 4.45            | 4.45 | 4.44 | 110.0                | 1.43                           | 1.45  | 1.46  |
| 210.1               | 750.1       | 1.32            | 1.29 | 1.27 | 750.1       | 4.63            | 4.62 | 4.61 | 190.0                | 1.22                           | 1.25  | 1.27  |
| 310.1               | 850.1       | 1.46            | 1.45 | 1.45 | 850.1       | 4.88            | 4.87 | 4.84 | 290.0                | 1.47                           | 1.49  | 1.51  |
| 410.1               | 950.1       | 1.49            | 1.48 | 1.48 | 950.1       | 5.27            | 5.25 | 5.22 | 370.0                | 1.60                           | 1.62  | 1.64  |
| 510.1               | 1050.1      | 1.60            | 1.59 | 1.58 | 1050.1      | 5.79            | 5.75 | 5.72 | 470.0                | 1.68                           | 1.70  | 1.72  |
| 610.1               | 1150.1      | 1.73            | 1.70 | 1.68 | 1150.1      | 6.42            | 6.37 | 6.30 | 550.0                | 1.79                           | 1.81  | 1.83  |
| 710.1               | 1250.1      | 1.96            | 1.93 | 1.91 | 1250.1      | 7.11            | 7.05 | 6.94 | 650.0                | 1.93                           | 1.95  | 1.96  |
| 810.1               | 1350.1      | 1.82            | 1.80 | 1.79 | 1350.1      | 7.53            | 7.47 | 7.38 | 730.0                | 1.94                           | 1.96  | 1.97  |
| 910.1               | 1450.1      | 1.79            | 1.77 | 1.75 | 1450.1      | 8.95            | 8.86 | 8.77 | 830.0                | 1.97                           | 1.99  | 2.01  |
| 1010.1              | 1550.1      | 1.88            | 1.86 | 1.84 | 1550.1      | 9.63            | 9.53 | 9.38 | 910.0                | 1.91                           | 1.93  | 1.94  |
| 1110.1              | 1650.1      | 1.97            | 1.94 | 1.92 | 1650.1      | 9.43            | 9.38 | 9.28 | 1010.0               | 1.85                           | 1.86  | 1.88  |
| 1210.1              | 1750.1      | 2.07            | 2.05 | 2.02 | 1750.1      | 8.20            | 8.12 | 8.01 | 1090.0               | 1.74                           | 1.76  | 1.77  |
| 1310.1              | 1850.1      | 2.08            | 2.05 | 2.03 | 1850.1      | 6.24            | 6.19 | 6.13 | 1190.0               | 1.63                           | 1.64  | 1.65  |
| 1410.1              | 1950.1      | 1.98            | 1.94 | 1.92 | 1950.1      | 4.39            | 4.35 | 4.31 | 1270.0               | 1.51                           | 1.52  | 1.53  |
| 1510.1              | 2050.1      | 1.90            | 1.88 | 1.85 | 2050.1      | 3.02            | 2.99 | 2.96 | 1370.0               | 1.39                           | 1.40  | 1.42  |
| 1610.1              | 2150.1      | 1.88            | 1.86 | 1.83 | 2150.1      | 2.17            | 2.15 | 2.13 | 1450.0               | 1.31                           | 1.33  | 1.35  |
| 1710.1              | 2250.1      | 1.80            | 1.77 | 1.75 | 2250.1      | 1.78            | 1.77 | 1.76 | 1550.0               | 1.23                           | 1.26  | 1.28  |
| 1810.1              | 2350.1      | 1.72            | 1.70 | 1.68 | 2350.1      | 1.76            | 1.76 | 1.76 | 1630.0               | 1.18                           | 1.21  | 1.23  |
| 1910.1              | 2450.1      | 1.62            | 1.60 | 1.58 | 2450.1      | 1.97            | 1.98 | 1.99 | 1730.0               | 1.16                           | 1.19  | 1.21  |
| 2010.1              | 2550.1      | 1.49            | 1.47 | 1.45 | 2550.1      | 2.29            | 2.30 | 2.31 | 1810.0               | 1.14                           | 1.17  | 1.20  |
| 2110.1              | 2650.1      | 1.37            | 1.35 | 1.33 | 2650.1      | 2.62            | 2.65 | 2.66 | 1910.0               | 1.13                           | 1.16  | 1.18  |
| 2210.1              | 2750.1      | 1.26            | 1.24 | 1.22 | 2750.1      | 2.98            | 3.00 | 3.01 | 1990.0               | 1.15                           | 1.17  | 1.19  |
| 2310.1              | 2850.1      | 1.22            | 1.20 | 1.18 | 2850.1      | 3.33            | 3.34 | 3.36 | 2090.0               | 1.14                           | 1.16  | 1.18  |
| 2410.1              | 2950.1      | 1.23            | 1.22 | 1.21 | 2950.1      | 3.60            | 3.62 | 3.62 | 2170.0               | 1.14                           | 1.15  | 1.16  |
| 2510.1              | 3050.1      | 1.24            | 1.24 | 1.23 | 3050.1      | 3.78            | 3.78 | 3.77 | 2270.0               | 1.12                           | 1.13  | 1.14  |
| 2610.1              | 3150.1      | 1.22            | 1.23 | 1.23 | 3150.1      | 3.76            | 3.73 | 3.70 | 2350.0               | 1.07                           | 1.08  | 1.09  |
| 2710.1              | 3250.1      | 1.17            | 1.18 | 1.18 | 3250.1      | 3.56            | 3.53 | 3.50 | 2450.0               | 1.07                           | 1.09  | 1.10  |
| 2810.1              | 3350.1      | 1.23            | 1.26 | 1.27 | 3350.1      | 3.26            | 3.21 | 3.16 | 2530.0               | 1.12                           | 1.14  | 1.15  |
| 2910.1              | 3450.1      | 1.39            | 1.41 | 1.43 | 3450.1      | 2.94            | 2.90 | 2.88 | 2630.0               | 1.14                           | 1.16  | 1.17  |
| 3010.1              | 3550.1      | 1.51            | 1.54 | 1.56 | 3550.1      | 2.65            | 2.63 | 2.60 | 2710.0               | 1.16                           | 1.18  | 1.19  |
| 3110.1              | 3650.1      | 1.61            | 1.63 | 1.65 | 3650.1      | 2.44            | 2.43 | 2.42 | 2810.0               | 1.21                           | 1.23  | 1.25  |
| 3210.1              | 3750.1      | 1.68            | 1.70 | 1.72 | 3750.1      | 2.30            | 2.29 | 2.29 | 2890.0               | 1.27                           | 1.29  | 1.30  |
| 3310.1              | 3850.1      | 1.76            | 1.77 | 1.80 | 3850.1      | 2.21            | 2.21 | 2.21 | 2990.0               | 1.29                           | 1.31  | 1.33  |
| 3390.1              | 3930.1      | 1.83            | 1.84 | 1.87 | 3930.1      | 2.17            | 2.17 | 2.17 | 3070.0               | 1.28                           | 1.29  | 1.29  |
| 3490.1              | 4030.1      | 1.89            | 1.90 | 1.93 | 4030.1      | 2.22            | 2.22 | 2.22 | 3170.0               | 1.17                           | 1.16  | 1.16  |
| 3570.1              | 4110.1      | 1.92            | 1.94 | 1.97 | 4110.1      | 2.23            | 2.22 | 2.22 | 3250.0               | 1.08                           | 1.08  | 1.08  |
| 3670.1              | 4210.1      | 1.94            | 1.96 | 1.99 | 4210.1      | 2.32            | 2.32 | 2.32 | 3350.0               | 1.16                           | 1.17  | 1.18  |
| 3750.1              | 4290.1      | 1.91            | 1.93 | 1.96 | 4290.1      | 2.35            | 2.34 | 2.33 | 3430.0               | 1.29                           | 1.31  | 1.33  |
| 3850.1              | 4390.1      | 1.91            | 1.94 | 1.94 | 4390.1      | 2.46            | 2.45 | 2.45 | 3530.0               | 1.55                           | 1.58  | 1.61  |

REV. X2

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101012

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## Harmonics Tables

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |     |     |     |     |     |     |     |     |     |     |
|----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0  | -      | -      | +2  | 5   | 25  | 34  | 40  | 56  | 42  | 51  | --- | --- |
| 1  | -      | 29     | +0  | 33  | 26  | 37  | 41  | 55  | 57  | 70  | 70  | --- |
| 2  | 58     | 59     | 67  | 48  | 61  | 61  | 74  | 73  | 79  | >83 | >83 | >83 |
| 3  | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 |
| 4  | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 |
| 5  | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 |
| 6  | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 |
| 7  | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 |
| 8  | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 |
| 9  | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 | >83 |
| 10 | >90    | >83    | >83 | >83 | >83 | >83 | >83 | >83 | 82  | >83 | 80  | >83 |
|    | RF CAL | 0      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |

### LO HARMONICS ORDER

Test conditions: RF IN: 2200 MHz; 0.00 dBm.  
LO IN: 2740 MHz; +22.00 dBm  
IF OUT: 540 MHz; -7.44 dBm

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |     |     |     |     |     |     |     |     |     |     |
|----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0  | -      | -      | 8   | 15  | 35  | 46  | 51  | 68  | 53  | 62  | --- | --- |
| 1  | -      | 29     | +0  | 33  | 26  | 37  | 41  | 55  | 57  | 71  | 71  | --- |
| 2  | 38     | 48     | 58  | 38  | 52  | 50  | 63  | 62  | 70  | 83  | 78  | 84  |
| 3  | 67     | 84     | 64  | 65  | 61  | 78  | 78  | 85  | 83  | 91  | >93 | 92  |
| 4  | 90     | 88     | 84  | 87  | 79  | 78  | 83  | >93 | >93 | >93 | >93 | >93 |
| 5  | >90    | >93    | >93 | >93 | 90  | >93 | 83  | >93 | >93 | >93 | >93 | >93 |
| 6  | >90    | >93    | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 |
| 7  | >90    | >93    | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 |
| 8  | >90    | >93    | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 |
| 9  | >90    | >93    | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 | >93 |
| 10 | >90    | >93    | >93 | >93 | >93 | >93 | >93 | >93 | 93  | >93 | 90  | >93 |
|    | RF CAL | 0      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |

### LO HARMONICS ORDER

Test conditions: RF IN: 2200 MHz; 10.00 dBm.  
LO IN: 2740 MHz; +22.00 dBm  
IF OUT: 540 MHz; 2.59 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.