

# Frequency Mixer

LAVI-ED12538B/1

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>IF FIXED<br>@IF(OUT)=70MHz<br>(dB) |       |       |
|---------------------|-------------|-------------------------------------------------------|-------|-------|
|                     |             | @LO (dBm)                                             |       |       |
|                     |             | +17                                                   | +19   | +21   |
| 1150.1              | 1080.1      | 11.62                                                 | 11.39 | 11.18 |
| 1195.1              | 1125.1      | 9.59                                                  | 9.29  | 9.04  |
| 1240.1              | 1170.1      | 8.67                                                  | 8.44  | 8.27  |
| 1285.1              | 1215.1      | 8.53                                                  | 8.35  | 8.21  |
| 1330.1              | 1260.1      | 8.37                                                  | 8.22  | 8.12  |
| 1375.1              | 1305.1      | 8.42                                                  | 8.29  | 8.19  |
| 1420.1              | 1350.1      | 8.31                                                  | 8.20  | 8.12  |
| 1465.1              | 1395.1      | 8.35                                                  | 8.25  | 8.17  |
| 1510.1              | 1440.1      | 8.23                                                  | 8.13  | 8.08  |
| 1555.1              | 1485.1      | 8.35                                                  | 8.26  | 8.21  |
| 1600.1              | 1530.1      | 8.24                                                  | 8.16  | 8.11  |
| 1645.1              | 1575.1      | 8.40                                                  | 8.30  | 8.26  |
| 1690.1              | 1620.1      | 8.36                                                  | 8.26  | 8.21  |
| 1735.1              | 1665.1      | 8.52                                                  | 8.42  | 8.38  |
| 1780.1              | 1710.1      | 8.64                                                  | 8.52  | 8.44  |
| 1825.1              | 1755.1      | 8.70                                                  | 8.57  | 8.51  |
| 1870.1              | 1800.1      | 8.79                                                  | 8.65  | 8.56  |
| 1915.1              | 1845.1      | 8.90                                                  | 8.75  | 8.63  |
| 1960.1              | 1890.1      | 8.96                                                  | 8.79  | 8.66  |
| 2005.1              | 1935.1      | 9.08                                                  | 8.90  | 8.75  |
| 2050.1              | 1980.1      | 9.16                                                  | 8.95  | 8.79  |
| 2095.1              | 2025.1      | 9.22                                                  | 9.02  | 8.85  |
| 2140.1              | 2070.1      | 9.31                                                  | 9.06  | 8.90  |
| 2185.1              | 2115.1      | 9.40                                                  | 9.14  | 8.97  |
| 2230.1              | 2160.1      | 9.50                                                  | 9.25  | 9.07  |
| 2275.1              | 2205.1      | 9.52                                                  | 9.27  | 9.08  |
| 2320.1              | 2250.1      | 9.64                                                  | 9.38  | 9.20  |
| 2365.1              | 2295.1      | 9.67                                                  | 9.40  | 9.19  |
| 2410.1              | 2340.1      | 9.74                                                  | 9.48  | 9.28  |
| 2455.1              | 2385.1      | 9.84                                                  | 9.56  | 9.34  |
| 2500.1              | 2430.1      | 9.90                                                  | 9.63  | 9.41  |
| 2545.1              | 2475.1      | 10.02                                                 | 9.71  | 9.50  |
| 2590.1              | 2520.1      | 10.01                                                 | 9.71  | 9.50  |
| 2635.1              | 2565.1      | 10.18                                                 | 9.85  | 9.64  |
| 2675.1              | 2605.1      | 10.13                                                 | 9.82  | 9.61  |
| 2720.1              | 2650.1      | 10.34                                                 | 10.00 | 9.79  |
| 2760.1              | 2690.1      | 10.27                                                 | 9.96  | 9.74  |
| 2805.1              | 2735.1      | 10.47                                                 | 10.17 | 9.93  |
| 2845.1              | 2775.1      | 10.49                                                 | 10.16 | 9.93  |
| 2890.1              | 2820.1      | 10.65                                                 | 10.34 | 10.11 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | IP3 INPUT<br>(dBm) |       |       |
|---------------------|-------------|--------------------|-------|-------|
|                     |             | @LO (dBm)          |       |       |
|                     |             | +17                | +19   | +21   |
| 1150.1              | 1080.1      | 24.52              | 26.43 | 28.29 |
| 1195.1              | 1125.1      | 21.35              | 24.08 | 26.27 |
| 1240.1              | 1170.1      | 21.99              | 24.38 | 26.62 |
| 1285.1              | 1215.1      | 22.83              | 24.88 | 26.88 |
| 1330.1              | 1260.1      | 24.18              | 26.19 | 28.25 |
| 1375.1              | 1305.1      | 24.96              | 27.13 | 29.32 |
| 1420.1              | 1350.1      | 27.02              | 29.19 | 31.76 |
| 1465.1              | 1395.1      | 28.18              | 30.49 | 33.13 |
| 1510.1              | 1440.1      | 29.99              | 32.65 | 35.03 |
| 1555.1              | 1485.1      | 31.49              | 33.75 | 35.77 |
| 1600.1              | 1530.1      | 32.37              | 34.95 | 36.48 |
| 1645.1              | 1575.1      | 31.92              | 33.94 | 36.11 |
| 1690.1              | 1620.1      | 30.53              | 32.60 | 34.23 |
| 1735.1              | 1665.1      | 30.09              | 32.26 | 33.04 |
| 1780.1              | 1710.1      | 28.15              | 30.32 | 32.41 |
| 1825.1              | 1755.1      | 28.81              | 31.21 | 32.60 |
| 1870.1              | 1800.1      | 27.69              | 29.92 | 32.13 |
| 1915.1              | 1845.1      | 27.00              | 29.23 | 31.86 |
| 1960.1              | 1890.1      | 25.73              | 28.00 | 30.56 |
| 2005.1              | 1935.1      | 25.33              | 27.53 | 30.27 |
| 2050.1              | 1980.1      | 24.19              | 26.38 | 28.67 |
| 2095.1              | 2025.1      | 23.88              | 26.10 | 28.57 |
| 2140.1              | 2070.1      | 22.69              | 24.97 | 27.25 |
| 2185.1              | 2115.1      | 22.17              | 24.41 | 26.57 |
| 2230.1              | 2160.1      | 21.34              | 23.52 | 25.53 |
| 2275.1              | 2205.1      | 21.07              | 23.03 | 25.10 |
| 2320.1              | 2250.1      | 20.62              | 22.55 | 24.51 |
| 2365.1              | 2295.1      | 20.24              | 22.08 | 24.26 |
| 2410.1              | 2340.1      | 20.34              | 22.18 | 24.31 |
| 2455.1              | 2385.1      | 19.63              | 21.53 | 23.66 |
| 2500.1              | 2430.1      | 19.98              | 21.95 | 24.08 |
| 2545.1              | 2475.1      | 19.27              | 21.41 | 23.38 |
| 2590.1              | 2520.1      | 19.70              | 21.85 | 23.89 |
| 2635.1              | 2565.1      | 18.96              | 21.15 | 23.12 |
| 2675.1              | 2605.1      | 19.37              | 21.42 | 23.45 |
| 2720.1              | 2650.1      | 18.56              | 20.76 | 22.62 |
| 2760.1              | 2690.1      | 18.97              | 20.98 | 22.85 |
| 2805.1              | 2735.1      | 18.61              | 20.55 | 22.56 |
| 2845.1              | 2775.1      | 18.45              | 20.47 | 22.64 |
| 2890.1              | 2820.1      | 18.57              | 20.48 | 22.56 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | COMPRESSION<br>@RF IN=+15dBm<br>(dB) |      |      |
|---------------------|-------------|--------------------------------------|------|------|
|                     |             | @LO (dBm)                            |      |      |
|                     |             | +17                                  | +19  | +21  |
| 1150.1              | 1080.1      | 0.83                                 | 0.57 | 0.36 |
| 1195.1              | 1125.1      | 1.91                                 | 1.25 | 0.70 |
| 1240.1              | 1170.1      | 1.45                                 | 0.85 | 0.48 |
| 1285.1              | 1215.1      | 0.96                                 | 0.53 | 0.30 |
| 1330.1              | 1260.1      | 0.57                                 | 0.32 | 0.19 |
| 1375.1              | 1305.1      | 0.42                                 | 0.24 | 0.15 |
| 1420.1              | 1350.1      | 0.28                                 | 0.17 | 0.11 |
| 1465.1              | 1395.1      | 0.22                                 | 0.14 | 0.08 |
| 1510.1              | 1440.1      | 0.15                                 | 0.09 | 0.06 |
| 1555.1              | 1485.1      | 0.13                                 | 0.08 | 0.04 |
| 1600.1              | 1530.1      | 0.12                                 | 0.07 | 0.04 |
| 1645.1              | 1575.1      | 0.13                                 | 0.08 | 0.05 |
| 1690.1              | 1620.1      | 0.16                                 | 0.10 | 0.06 |
| 1735.1              | 1665.1      | 0.18                                 | 0.10 | 0.08 |
| 1780.1              | 1710.1      | 0.33                                 | 0.20 | 0.12 |
| 1825.1              | 1755.1      | 0.31                                 | 0.18 | 0.13 |
| 1870.1              | 1800.1      | 0.44                                 | 0.25 | 0.15 |
| 1915.1              | 1845.1      | 0.52                                 | 0.30 | 0.17 |
| 1960.1              | 1890.1      | 0.72                                 | 0.42 | 0.23 |
| 2005.1              | 1935.1      | 0.81                                 | 0.47 | 0.25 |
| 2050.1              | 1980.1      | 1.11                                 | 0.65 | 0.35 |
| 2095.1              | 2025.1      | 1.20                                 | 0.69 | 0.38 |
| 2140.1              | 2070.1      | 1.53                                 | 0.85 | 0.49 |
| 2185.1              | 2115.1      | 1.65                                 | 0.93 | 0.55 |
| 2230.1              | 2160.1      | 1.86                                 | 1.11 | 0.65 |
| 2275.1              | 2205.1      | 1.93                                 | 1.20 | 0.70 |
| 2320.1              | 2250.1      | 2.07                                 | 1.26 | 0.77 |
| 2365.1              | 2295.1      | 2.23                                 | 1.42 | 0.81 |
| 2410.1              | 2340.1      | 2.21                                 | 1.39 | 0.80 |
| 2455.1              | 2385.1      | 2.56                                 | 1.63 | 0.94 |
| 2500.1              | 2430.1      | 2.45                                 | 1.55 | 0.89 |
| 2545.1              | 2475.1      | 2.84                                 | 1.78 | 1.11 |
| 2590.1              | 2520.1      | 2.66                                 | 1.66 | 0.98 |
| 2635.1              | 2565.1      | 3.06                                 | 1.96 | 1.20 |
| 2675.1              | 2605.1      | 2.85                                 | 1.79 | 1.08 |
| 2720.1              | 2650.1      | 3.29                                 | 2.14 | 1.35 |
| 2760.1              | 2690.1      | 2.97                                 | 1.95 | 1.21 |
| 2805.1              | 2735.1      | 3.20                                 | 2.18 | 1.34 |
| 2845.1              | 2775.1      | 3.31                                 | 2.22 | 1.37 |
| 2890.1              | 2820.1      | 3.23                                 | 2.21 | 1.34 |

# Frequency Mixer

LAVI-ED12538B/1

## Typical Performance Data

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=1600MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=1565.5MHz<br>(dB) | IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=1634.1MHz<br>(dB) |
|----------------------|-------------|----------------------------------------------------------------|----------------------|-------------|------------------------------------------------------------------|----------------------|-------------|------------------------------------------------------------------|
|                      |             | @LO (dBm)                                                      |                      |             | @LO (dBm)                                                        |                      |             | @LO (dBm)                                                        |
|                      |             | +19                                                            |                      |             | +19                                                              |                      |             | +19                                                              |
| 500.0                | 1100.0      | 10.61                                                          | 10.5                 | 1576.0      | 8.71                                                             | 530.1                | 1104.0      | 10.69                                                            |
| 475.2                | 1124.8      | 9.70                                                           | 40.5                 | 1606.0      | 8.35                                                             | 520.1                | 1114.0      | 10.29                                                            |
| 450.4                | 1149.6      | 9.04                                                           | 70.5                 | 1636.0      | 8.35                                                             | 510.1                | 1124.0      | 9.92                                                             |
| 425.6                | 1174.4      | 8.66                                                           | 100.5                | 1666.0      | 8.34                                                             | 500.1                | 1134.0      | 9.58                                                             |
| 400.8                | 1199.2      | 8.58                                                           | 130.5                | 1696.0      | 8.50                                                             | 490.1                | 1144.0      | 9.31                                                             |
| 375.9                | 1224.1      | 8.48                                                           | 160.5                | 1726.0      | 8.57                                                             | 480.1                | 1154.0      | 9.10                                                             |
| 351.1                | 1248.9      | 8.36                                                           | 190.5                | 1756.0      | 8.52                                                             | 470.1                | 1164.0      | 8.92                                                             |
| 326.3                | 1273.7      | 8.34                                                           | 220.5                | 1786.0      | 8.59                                                             | 460.1                | 1174.0      | 8.83                                                             |
| 301.5                | 1298.5      | 8.33                                                           | 250.5                | 1816.0      | 8.61                                                             | 450.1                | 1184.0      | 8.76                                                             |
| 276.7                | 1323.3      | 8.31                                                           | 280.5                | 1846.0      | 8.62                                                             | 440.1                | 1194.0      | 8.65                                                             |
| 251.9                | 1348.1      | 8.26                                                           | 310.5                | 1876.0      | 8.67                                                             | 430.1                | 1204.0      | 8.63                                                             |
| 227.1                | 1372.9      | 8.22                                                           | 340.5                | 1906.0      | 8.66                                                             | 420.1                | 1214.0      | 8.60                                                             |
| 202.3                | 1397.7      | 8.24                                                           | 370.5                | 1936.0      | 8.67                                                             | 410.1                | 1224.0      | 8.60                                                             |
| 177.5                | 1422.5      | 8.23                                                           | 400.5                | 1966.0      | 8.73                                                             | 400.1                | 1234.0      | 8.52                                                             |
| 152.7                | 1447.3      | 8.13                                                           | 430.5                | 1996.0      | 8.76                                                             | 380.1                | 1254.0      | 8.50                                                             |
| 127.8                | 1472.2      | 8.18                                                           | 460.5                | 2026.0      | 8.82                                                             | 370.1                | 1264.0      | 8.44                                                             |
| 103.0                | 1497.0      | 8.18                                                           | 490.5                | 2056.0      | 8.84                                                             | 350.1                | 1284.0      | 8.41                                                             |
| 78.2                 | 1521.8      | 8.25                                                           | 520.5                | 2086.0      | 8.99                                                             | 340.1                | 1294.0      | 8.41                                                             |
| 53.4                 | 1546.6      | 8.28                                                           | 550.5                | 2116.0      | 9.03                                                             | 320.1                | 1314.0      | 8.42                                                             |
| 28.6                 | 1571.4      | 8.26                                                           | 580.5                | 2146.0      | 9.01                                                             | 310.1                | 1324.0      | 8.39                                                             |
| 10.0                 | 1610.0      | 8.71                                                           | 610.5                | 2176.0      | 9.13                                                             | 290.1                | 1344.0      | 8.36                                                             |
| 64.5                 | 1664.5      | 8.36                                                           | 640.5                | 2206.0      | 9.13                                                             | 280.1                | 1354.0      | 8.34                                                             |
| 119.0                | 1719.0      | 8.51                                                           | 670.5                | 2236.0      | 9.12                                                             | 260.1                | 1374.0      | 8.29                                                             |
| 173.5                | 1773.5      | 8.48                                                           | 700.5                | 2266.0      | 9.25                                                             | 250.1                | 1384.0      | 8.35                                                             |
| 228.0                | 1828.0      | 8.54                                                           | 730.5                | 2296.0      | 9.24                                                             | 230.1                | 1404.0      | 8.30                                                             |
| 282.5                | 1882.5      | 8.61                                                           | 760.5                | 2326.0      | 9.23                                                             | 220.1                | 1414.0      | 8.34                                                             |
| 337.0                | 1937.0      | 8.64                                                           | 790.5                | 2356.0      | 9.36                                                             | 200.1                | 1434.0      | 8.27                                                             |
| 391.5                | 1991.5      | 8.76                                                           | 820.5                | 2386.0      | 9.41                                                             | 190.1                | 1444.0      | 8.30                                                             |
| 446.0                | 2046.0      | 8.74                                                           | 850.5                | 2416.0      | 9.34                                                             | 170.1                | 1464.0      | 8.25                                                             |
| 500.5                | 2100.5      | 8.92                                                           | 880.5                | 2446.0      | 9.52                                                             | 160.1                | 1474.0      | 8.27                                                             |
| 555.0                | 2155.0      | 9.01                                                           | 910.5                | 2476.0      | 9.58                                                             | 140.1                | 1494.0      | 8.27                                                             |
| 609.5                | 2209.5      | 9.04                                                           | 940.5                | 2506.0      | 9.54                                                             | 130.1                | 1504.0      | 8.27                                                             |
| 664.0                | 2264.0      | 9.16                                                           | 970.5                | 2536.0      | 9.72                                                             | 110.1                | 1524.0      | 8.29                                                             |
| 732.1                | 2332.1      | 9.13                                                           | 1000.5               | 2566.0      | 9.84                                                             | 100.1                | 1534.0      | 8.24                                                             |
| 786.6                | 2386.6      | 9.31                                                           | 1040.5               | 2606.0      | 9.87                                                             | 80.1                 | 1554.0      | 8.35                                                             |
| 854.7                | 2454.8      | 9.41                                                           | 1070.5               | 2636.0      | 10.13                                                            | 70.1                 | 1564.0      | 8.28                                                             |
| 909.3                | 2509.3      | 9.45                                                           | 1110.5               | 2676.0      | 10.21                                                            | 50.1                 | 1584.0      | 8.35                                                             |
| 977.4                | 2577.4      | 9.70                                                           | 1140.5               | 2706.0      | 10.21                                                            | 40.1                 | 1594.0      | 8.36                                                             |
| 1031.9               | 2631.9      | 9.83                                                           | 1180.5               | 2746.0      | 10.54                                                            | 20.1                 | 1614.0      | 8.40                                                             |
| 1100.0               | 2700.0      | 10.12                                                          | 1210.5               | 2776.0      | 10.61                                                            | 10.1                 | 1624.0      | 8.74                                                             |

# Frequency Mixer

LAVI-ED12538B/1

## Typical Performance Data

| LO<br>(MHz) | LO-RF ISOLATION<br>(dB) |       |       | LO-IF ISOLATION<br>(dB) |       |       |
|-------------|-------------------------|-------|-------|-------------------------|-------|-------|
|             | @LO (dBm)               |       |       | @LO (dBm)               |       |       |
|             | +17                     | +19   | +21   | +17                     | +19   | +21   |
| 1080.1      | 58.10                   | 57.92 | 55.43 | 39.26                   | 39.82 | 40.22 |
| 1125.1      | 50.49                   | 50.64 | 50.30 | 45.02                   | 45.31 | 45.31 |
| 1170.1      | 46.84                   | 46.66 | 46.20 | 50.02                   | 50.38 | 49.53 |
| 1215.1      | 44.76                   | 44.64 | 44.33 | 52.90                   | 52.90 | 50.69 |
| 1260.1      | 44.07                   | 44.06 | 43.88 | 53.85                   | 53.48 | 50.68 |
| 1305.1      | 43.27                   | 43.28 | 43.03 | 52.64                   | 52.14 | 49.36 |
| 1350.1      | 42.22                   | 42.41 | 42.00 | 49.11                   | 48.83 | 46.43 |
| 1395.1      | 39.27                   | 39.50 | 39.36 | 43.27                   | 43.12 | 41.48 |
| 1440.1      | 46.79                   | 46.75 | 46.47 | 43.37                   | 43.05 | 42.35 |
| 1485.1      | 48.57                   | 48.89 | 48.53 | 46.18                   | 45.55 | 43.73 |
| 1530.1      | 47.56                   | 47.84 | 47.48 | 42.29                   | 41.87 | 40.56 |
| 1575.1      | 48.22                   | 48.29 | 48.03 | 39.64                   | 39.19 | 38.62 |
| 1620.1      | 49.80                   | 49.79 | 49.44 | 37.95                   | 37.63 | 37.47 |
| 1665.1      | 54.04                   | 54.01 | 51.44 | 36.97                   | 36.88 | 36.82 |
| 1710.1      | 60.50                   | 60.80 | 58.56 | 36.65                   | 36.65 | 36.57 |
| 1755.1      | 57.09                   | 56.03 | 53.56 | 36.22                   | 36.23 | 36.32 |
| 1800.1      | 55.71                   | 55.36 | 57.27 | 35.84                   | 35.86 | 35.89 |
| 1845.1      | 52.01                   | 51.52 | 51.30 | 35.51                   | 35.53 | 35.49 |
| 1890.1      | 50.44                   | 49.97 | 50.04 | 35.10                   | 35.14 | 35.04 |
| 1935.1      | 47.86                   | 47.64 | 47.89 | 34.67                   | 34.79 | 34.87 |
| 1980.1      | 47.05                   | 46.87 | 47.21 | 34.27                   | 34.39 | 34.43 |
| 2025.1      | 45.72                   | 45.49 | 45.73 | 33.98                   | 34.02 | 33.97 |
| 2070.1      | 45.27                   | 44.83 | 45.20 | 33.84                   | 33.72 | 33.80 |
| 2115.1      | 44.14                   | 43.68 | 43.96 | 33.73                   | 33.61 | 33.70 |
| 2160.1      | 43.11                   | 42.72 | 43.08 | 33.63                   | 33.63 | 33.72 |
| 2205.1      | 42.26                   | 41.98 | 42.31 | 33.48                   | 33.58 | 33.68 |
| 2250.1      | 41.54                   | 41.32 | 41.66 | 33.46                   | 33.57 | 33.69 |
| 2295.1      | 40.93                   | 40.85 | 41.19 | 33.30                   | 33.53 | 33.62 |
| 2340.1      | 40.11                   | 40.04 | 40.23 | 33.18                   | 33.38 | 33.34 |
| 2385.1      | 39.73                   | 39.53 | 39.80 | 33.06                   | 33.19 | 33.24 |
| 2430.1      | 38.97                   | 38.74 | 38.90 | 32.95                   | 33.03 | 32.99 |
| 2475.1      | 38.28                   | 37.87 | 38.33 | 32.72                   | 32.66 | 32.88 |
| 2520.1      | 37.69                   | 37.30 | 37.63 | 32.62                   | 32.56 | 32.64 |
| 2565.1      | 37.16                   | 36.78 | 37.28 | 32.44                   | 32.35 | 32.57 |
| 2605.1      | 36.58                   | 36.21 | 36.62 | 32.38                   | 32.31 | 32.45 |
| 2650.1      | 36.15                   | 35.79 | 36.28 | 32.20                   | 32.10 | 32.36 |
| 2690.1      | 35.58                   | 35.37 | 35.79 | 31.97                   | 31.99 | 32.20 |
| 2735.1      | 35.11                   | 35.07 | 35.40 | 31.81                   | 31.98 | 32.09 |
| 2775.1      | 34.82                   | 34.65 | 35.00 | 31.76                   | 31.82 | 31.91 |
| 2820.1      | 34.39                   | 34.39 | 34.74 | 31.64                   | 31.80 | 31.89 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF-IF ISOLATION<br>(dB) |       |       |
|---------------------|-------------|-------------------------|-------|-------|
|                     |             | @LO (dBm)               |       |       |
|                     |             | +17                     | +19   | +21   |
| 1150.1              | 1080.1      | 38.43                   | 38.45 | 38.46 |
| 1195.1              | 1125.1      | 40.04                   | 40.84 | 42.41 |
| 1240.1              | 1170.1      | 41.00                   | 42.13 | 44.95 |
| 1285.1              | 1215.1      | 38.88                   | 39.26 | 40.17 |
| 1330.1              | 1260.1      | 38.98                   | 39.47 | 40.42 |
| 1375.1              | 1305.1      | 39.00                   | 39.38 | 40.27 |
| 1420.1              | 1350.1      | 42.30                   | 42.91 | 44.74 |
| 1465.1              | 1395.1      | 39.83                   | 40.51 | 42.09 |
| 1510.1              | 1440.1      | 38.66                   | 39.23 | 40.52 |
| 1555.1              | 1485.1      | 37.49                   | 37.80 | 38.57 |
| 1600.1              | 1530.1      | 36.37                   | 36.56 | 37.09 |
| 1645.1              | 1575.1      | 35.64                   | 35.73 | 35.99 |
| 1690.1              | 1620.1      | 34.74                   | 34.81 | 34.84 |
| 1735.1              | 1665.1      | 33.89                   | 33.77 | 33.54 |
| 1780.1              | 1710.1      | 33.24                   | 33.04 | 33.17 |
| 1825.1              | 1755.1      | 33.07                   | 32.80 | 31.63 |
| 1870.1              | 1800.1      | 33.48                   | 33.46 | 32.61 |
| 1915.1              | 1845.1      | 34.31                   | 34.61 | 37.12 |
| 1960.1              | 1890.1      | 34.36                   | 34.64 | 35.13 |
| 2005.1              | 1935.1      | 34.93                   | 35.13 | 35.45 |
| 2050.1              | 1980.1      | 35.10                   | 35.21 | 35.26 |
| 2095.1              | 2025.1      | 36.04                   | 36.24 | 36.50 |
| 2140.1              | 2070.1      | 36.80                   | 37.21 | 37.76 |
| 2185.1              | 2115.1      | 37.11                   | 37.50 | 38.03 |
| 2230.1              | 2160.1      | 37.27                   | 37.57 | 37.97 |
| 2275.1              | 2205.1      | 37.55                   | 37.82 | 38.13 |
| 2320.1              | 2250.1      | 37.94                   | 38.21 | 38.39 |
| 2365.1              | 2295.1      | 38.54                   | 38.78 | 39.04 |
| 2410.1              | 2340.1      | 39.11                   | 39.34 | 39.48 |
| 2455.1              | 2385.1      | 39.62                   | 39.88 | 40.00 |
| 2500.1              | 2430.1      | 40.30                   | 40.51 | 40.55 |
| 2545.1              | 2475.1      | 40.77                   | 40.99 | 40.95 |
| 2590.1              | 2520.1      | 41.39                   | 41.67 | 41.55 |
| 2635.1              | 2565.1      | 41.93                   | 42.25 | 42.08 |
| 2675.1              | 2605.1      | 42.54                   | 42.85 | 42.67 |
| 2720.1              | 2650.1      | 42.91                   | 43.26 | 42.99 |
| 2760.1              | 2690.1      | 43.37                   | 43.65 | 43.24 |
| 2805.1              | 2735.1      | 43.61                   | 43.93 | 43.47 |
| 2845.1              | 2775.1      | 43.89                   | 44.20 | 43.49 |
| 2890.1              | 2820.1      | 44.00                   | 44.34 | 43.83 |

# Frequency Mixer

LAVI-ED12538B/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=1608MHz<br>(:1) |      |      |
|---------------------|-------------|-----------------|------|------|-------------|-----------------|-------|-------|----------------------|--------------------------------|------|------|
|                     |             | @LO (dBm)       |      |      |             | @LO (dBm)       |       |       |                      | @LO (dBm)                      |      |      |
|                     |             | +17             | +19  | +21  |             | +17             | +19   | +21   |                      | +17                            | +19  | +21  |
| 1150.1              | 1080.1      | 1.81            | 1.77 | 1.73 | 1080.1      | 19.54           | 19.54 | 19.11 | 10.0                 | 1.94                           | 2.02 | 2.09 |
| 1195.1              | 1125.1      | 2.36            | 2.33 | 2.30 | 1125.1      | 23.18           | 22.87 | 22.00 | 50.0                 | 1.94                           | 2.02 | 2.09 |
| 1240.1              | 1170.1      | 2.52            | 2.49 | 2.46 | 1170.1      | 21.73           | 21.46 | 20.70 | 90.0                 | 1.88                           | 1.96 | 2.03 |
| 1285.1              | 1215.1      | 2.46            | 2.43 | 2.39 | 1215.1      | 18.50           | 18.11 | 17.39 | 130.0                | 1.85                           | 1.93 | 2.00 |
| 1330.1              | 1260.1      | 2.32            | 2.29 | 2.25 | 1260.1      | 15.00           | 14.74 | 14.50 | 170.0                | 1.78                           | 1.86 | 1.92 |
| 1375.1              | 1305.1      | 2.21            | 2.17 | 2.14 | 1305.1      | 11.17           | 10.96 | 10.56 | 210.0                | 1.73                           | 1.80 | 1.86 |
| 1420.1              | 1350.1      | 2.05            | 2.02 | 1.98 | 1350.1      | 8.12            | 8.05  | 7.90  | 250.0                | 1.66                           | 1.72 | 1.77 |
| 1465.1              | 1395.1      | 1.97            | 1.94 | 1.90 | 1395.1      | 5.30            | 5.22  | 5.13  | 290.0                | 1.57                           | 1.63 | 1.68 |
| 1510.1              | 1440.1      | 1.85            | 1.82 | 1.78 | 1440.1      | 3.54            | 3.50  | 3.43  | 330.0                | 1.51                           | 1.56 | 1.60 |
| 1555.1              | 1485.1      | 1.77            | 1.73 | 1.69 | 1485.1      | 2.30            | 2.28  | 2.24  | 370.0                | 1.39                           | 1.44 | 1.48 |
| 1600.1              | 1530.1      | 1.67            | 1.64 | 1.60 | 1530.1      | 1.75            | 1.76  | 1.76  | 410.0                | 1.32                           | 1.36 | 1.40 |
| 1645.1              | 1575.1      | 1.60            | 1.57 | 1.53 | 1575.1      | 2.01            | 2.05  | 2.09  | 450.0                | 1.22                           | 1.26 | 1.29 |
| 1690.1              | 1620.1      | 1.56            | 1.52 | 1.48 | 1620.1      | 2.77            | 2.82  | 2.86  | 490.0                | 1.14                           | 1.18 | 1.21 |
| 1735.1              | 1665.1      | 1.51            | 1.47 | 1.45 | 1665.1      | 3.85            | 3.91  | 3.95  | 530.0                | 1.08                           | 1.11 | 1.14 |
| 1780.1              | 1710.1      | 1.51            | 1.47 | 1.43 | 1710.1      | 5.00            | 5.06  | 5.09  | 570.0                | 1.02                           | 1.05 | 1.08 |
| 1825.1              | 1755.1      | 1.45            | 1.41 | 1.39 | 1755.1      | 6.39            | 6.46  | 6.51  | 610.0                | 1.08                           | 1.07 | 1.07 |
| 1870.1              | 1800.1      | 1.45            | 1.41 | 1.37 | 1800.1      | 7.63            | 7.60  | 7.44  | 650.0                | 1.17                           | 1.16 | 1.16 |
| 1915.1              | 1845.1      | 1.42            | 1.38 | 1.33 | 1845.1      | 9.08            | 9.13  | 9.04  | 690.0                | 1.25                           | 1.24 | 1.23 |
| 1960.1              | 1890.1      | 1.42            | 1.38 | 1.34 | 1890.1      | 10.02           | 9.79  | 9.43  | 730.0                | 1.35                           | 1.34 | 1.33 |
| 2005.1              | 1935.1      | 1.38            | 1.35 | 1.31 | 1935.1      | 11.46           | 11.38 | 11.31 | 770.0                | 1.46                           | 1.45 | 1.44 |
| 2050.1              | 1980.1      | 1.38            | 1.34 | 1.30 | 1980.1      | 11.85           | 11.46 | 10.75 | 810.0                | 1.54                           | 1.53 | 1.52 |
| 2095.1              | 2025.1      | 1.34            | 1.31 | 1.26 | 2025.1      | 13.29           | 13.09 | 12.80 | 850.0                | 1.67                           | 1.67 | 1.66 |
| 2140.1              | 2070.1      | 1.33            | 1.29 | 1.26 | 2070.1      | 13.29           | 12.71 | 11.85 | 890.0                | 1.74                           | 1.74 | 1.73 |
| 2185.1              | 2115.1      | 1.30            | 1.26 | 1.22 | 2115.1      | 14.62           | 14.38 | 13.92 | 930.0                | 1.87                           | 1.87 | 1.87 |
| 2230.1              | 2160.1      | 1.27            | 1.23 | 1.20 | 2160.1      | 14.26           | 13.60 | 12.71 | 970.0                | 1.96                           | 1.97 | 1.97 |
| 2275.1              | 2205.1      | 1.24            | 1.21 | 1.18 | 2205.1      | 15.26           | 14.87 | 14.15 | 1010.0               | 2.03                           | 2.04 | 2.05 |
| 2320.1              | 2250.1      | 1.21            | 1.18 | 1.16 | 2250.1      | 14.87           | 14.38 | 13.60 | 1050.0               | 2.16                           | 2.18 | 2.19 |
| 2365.1              | 2295.1      | 1.19            | 1.17 | 1.16 | 2295.1      | 15.26           | 14.62 | 13.81 | 1090.0               | 2.29                           | 2.31 | 2.33 |
| 2410.1              | 2340.1      | 1.16            | 1.15 | 1.15 | 2340.1      | 15.39           | 15.00 | 14.26 | 1130.0               | 2.37                           | 2.40 | 2.42 |
| 2455.1              | 2385.1      | 1.16            | 1.16 | 1.17 | 2385.1      | 14.87           | 14.15 | 13.19 | 1170.0               | 2.42                           | 2.45 | 2.47 |
| 2500.1              | 2430.1      | 1.16            | 1.17 | 1.19 | 2430.1      | 15.39           | 15.00 | 14.50 | 1210.0               | 2.51                           | 2.55 | 2.57 |
| 2545.1              | 2475.1      | 1.16            | 1.18 | 1.20 | 2475.1      | 14.38           | 13.70 | 12.61 | 1250.0               | 2.60                           | 2.65 | 2.68 |
| 2590.1              | 2520.1      | 1.17            | 1.20 | 1.23 | 2520.1      | 15.39           | 15.00 | 14.50 | 1290.0               | 2.58                           | 2.63 | 2.67 |
| 2635.1              | 2565.1      | 1.20            | 1.23 | 1.26 | 2565.1      | 13.60           | 12.80 | 11.61 | 1330.0               | 2.72                           | 2.77 | 2.81 |
| 2675.1              | 2605.1      | 1.22            | 1.26 | 1.30 | 2605.1      | 14.74           | 14.38 | 13.81 | 1370.0               | 2.71                           | 2.76 | 2.80 |
| 2720.1              | 2650.1      | 1.24            | 1.28 | 1.31 | 2650.1      | 13.19           | 12.44 | 11.24 | 1410.0               | 2.80                           | 2.86 | 2.91 |
| 2760.1              | 2690.1      | 1.28            | 1.32 | 1.36 | 2690.1      | 14.26           | 13.81 | 13.19 | 1450.0               | 2.85                           | 2.91 | 2.95 |
| 2805.1              | 2735.1      | 1.28            | 1.32 | 1.36 | 2735.1      | 13.49           | 12.80 | 11.77 | 1500.0               | 2.95                           | 3.01 | 3.06 |
| 2845.1              | 2775.1      | 1.33            | 1.37 | 1.41 | 2775.1      | 13.39           | 12.89 | 12.09 | 1540.0               | 2.95                           | 3.01 | 3.06 |
| 2890.1              | 2820.1      | 1.36            | 1.40 | 1.44 | 2820.1      | 13.49           | 12.89 | 12.01 | 1590.0               | 3.06                           | 3.13 | 3.17 |

## Harmonics Tables

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |     |     |     |     |     |     |     |     |     |     |
|----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0  | -      | -      | 16  | 31  | 15  | 20  | 20  | 31  | 27  | 52  | 48  | 51  |
| 1  | -      | 29     | +0  | 49  | 20  | 40  | 32  | 57  | 32  | 46  | 42  | 54  |
| 2  | 57     | 58     | 78  | 53  | >82 | 64  | 78  | 68  | 75  | 66  | 77  | 74  |
| 3  | >90    | >82    | >82 | >82 | 80  | >82 | >82 | >82 | >82 | >82 | 82  | >82 |
| 4  | >90    | >82    | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 |
| 5  | >90    | >82    | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 |
| 6  | >90    | >82    | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 |
| 7  | >90    | >82    | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 |
| 8  | >90    | >82    | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 |
| 9  | >90    | >82    | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 |
| 10 | >90    | >82    | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 | >82 |
|    | RF CAL | 0      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |

### LO HARMONICS ORDER

Test conditions:

RF IN: 1600 MHz; 0.00 dBm.  
LO IN: 1530 MHz; +19.00 dBm  
IF OUT: 70 MHz; -8.26 dBm

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |     |     |     |     |     |     |     |     |     |     |
|----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0  | -      | -      | 26  | 47  | 25  | 30  | 31  | 43  | 37  | 64  | 62  | 62  |
| 1  | -      | 29     | +0  | 48  | 20  | 40  | 32  | 56  | 33  | 46  | 42  | 54  |
| 2  | 37     | 48     | 69  | 43  | 64  | 54  | 69  | 58  | 65  | 57  | 63  | 64  |
| 3  | 71     | 81     | 65  | 78  | 57  | 81  | 66  | 79  | 67  | 88  | 62  | 82  |
| 4  | 90     | >92    | 88  | >92 | 84  | >92 | 87  | >92 | >92 | >92 | >92 | 86  |
| 5  | >90    | >92    | >92 | >92 | >92 | >92 | 85  | >92 | 91  | >92 | >92 | >92 |
| 6  | >90    | >92    | 87  | >92 | 90  | >92 | 87  | >92 | 85  | >92 | >92 | >92 |
| 7  | >90    | >92    | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 |
| 8  | >90    | >92    | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 |
| 9  | >90    | >92    | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 |
| 10 | >90    | >92    | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 | >92 |
|    | RF CAL | 0      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |

### LO HARMONICS ORDER

Test conditions:

RF IN: 1600 MHz; 10.00 dBm.  
LO IN: 1530 MHz; +19.00 dBm  
IF OUT: 70 MHz; 1.79 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.