

# Frequency Mixer

# RMS-25MHW+

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>IF FIXED<br>@IF(OUT)=30MHz<br>(dB) |       |       |
|---------------------|-------------|-------------------------------------------------------|-------|-------|
|                     |             | @LO (dBm)                                             |       |       |
|                     |             | +10                                                   | +13   | +16   |
| 10.1                | 40.1        | 6.91                                                  | 6.63  | 6.48  |
| 90.1                | 120.1       | 6.94                                                  | 6.68  | 6.57  |
| 170.1               | 200.1       | 7.04                                                  | 6.78  | 6.64  |
| 250.1               | 280.1       | 7.22                                                  | 6.92  | 6.74  |
| 330.1               | 360.1       | 7.26                                                  | 6.93  | 6.72  |
| 410.1               | 440.1       | 7.26                                                  | 6.92  | 6.71  |
| 490.1               | 520.1       | 7.35                                                  | 6.95  | 6.73  |
| 590.1               | 620.1       | 7.43                                                  | 6.98  | 6.73  |
| 670.1               | 700.1       | 7.46                                                  | 7.01  | 6.77  |
| 770.1               | 800.1       | 7.39                                                  | 6.95  | 6.72  |
| 850.1               | 880.1       | 7.28                                                  | 6.87  | 6.66  |
| 950.1               | 980.1       | 7.26                                                  | 6.90  | 6.71  |
| 1030.1              | 1060.1      | 7.30                                                  | 6.95  | 6.77  |
| 1130.1              | 1160.1      | 7.44                                                  | 7.08  | 6.89  |
| 1210.1              | 1240.1      | 7.50                                                  | 7.14  | 6.95  |
| 1310.1              | 1340.1      | 7.54                                                  | 7.15  | 6.95  |
| 1390.1              | 1420.1      | 7.54                                                  | 7.13  | 6.92  |
| 1490.1              | 1520.1      | 7.56                                                  | 7.11  | 6.90  |
| 1570.1              | 1600.1      | 7.61                                                  | 7.13  | 6.91  |
| 1670.1              | 1700.1      | 7.62                                                  | 7.12  | 6.90  |
| 1750.1              | 1780.1      | 7.64                                                  | 7.12  | 6.88  |
| 1850.1              | 1880.1      | 7.60                                                  | 7.04  | 6.82  |
| 1930.1              | 1960.1      | 7.60                                                  | 7.05  | 6.81  |
| 2030.1              | 2060.1      | 7.53                                                  | 6.99  | 6.75  |
| 2110.1              | 2140.1      | 7.57                                                  | 7.09  | 6.86  |
| 2210.1              | 2240.1      | 7.49                                                  | 7.05  | 6.87  |
| 2290.1              | 2320.1      | 7.59                                                  | 7.16  | 6.98  |
| 2390.1              | 2420.1      | 7.66                                                  | 7.27  | 7.10  |
| 2470.1              | 2500.1      | 7.72                                                  | 7.37  | 7.20  |
| 2570.1              | 2600.1      | 7.85                                                  | 7.53  | 7.38  |
| 2650.1              | 2680.1      | 7.99                                                  | 7.70  | 7.56  |
| 2750.1              | 2780.1      | 8.23                                                  | 7.95  | 7.84  |
| 2830.1              | 2860.1      | 8.40                                                  | 8.14  | 8.06  |
| 2930.1              | 2960.1      | 8.67                                                  | 8.45  | 8.37  |
| 3010.1              | 3040.1      | 8.94                                                  | 8.70  | 8.64  |
| 3110.1              | 3140.1      | 9.37                                                  | 9.11  | 9.03  |
| 3190.1              | 3220.1      | 9.67                                                  | 9.41  | 9.32  |
| 3290.1              | 3320.1      | 10.09                                                 | 9.85  | 9.76  |
| 3370.1              | 3400.1      | 10.43                                                 | 10.17 | 10.05 |
| 3470.1              | 3500.1      | 10.96                                                 | 10.64 | 10.51 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | IP3 INPUT<br>(dBm) |       |       |
|---------------------|-------------|--------------------|-------|-------|
|                     |             | @LO (dBm)          |       |       |
|                     |             | +10                | +13   | +16   |
| 10.1                | 40.1        | 29.15              | 32.69 | 31.75 |
| 90.1                | 120.1       | 32.53              | 32.66 | 30.20 |
| 170.1               | 200.1       | 27.17              | 24.35 | 23.52 |
| 250.1               | 280.1       | 21.59              | 21.03 | 21.82 |
| 330.1               | 360.1       | 20.22              | 20.49 | 22.92 |
| 410.1               | 440.1       | 19.37              | 20.73 | 24.23 |
| 490.1               | 520.1       | 19.06              | 21.89 | 26.18 |
| 590.1               | 620.1       | 18.38              | 22.45 | 26.46 |
| 670.1               | 700.1       | 18.47              | 22.13 | 23.72 |
| 770.1               | 800.1       | 20.02              | 22.47 | 22.52 |
| 850.1               | 880.1       | 20.23              | 20.64 | 20.93 |
| 950.1               | 980.1       | 19.25              | 19.47 | 20.02 |
| 1030.1              | 1060.1      | 19.98              | 20.49 | 21.03 |
| 1130.1              | 1160.1      | 18.70              | 19.77 | 20.83 |
| 1210.1              | 1240.1      | 18.47              | 20.50 | 21.57 |
| 1310.1              | 1340.1      | 18.00              | 19.49 | 20.58 |
| 1390.1              | 1420.1      | 16.95              | 18.12 | 19.19 |
| 1490.1              | 1520.1      | 16.27              | 17.60 | 18.81 |
| 1570.1              | 1600.1      | 15.50              | 16.74 | 17.88 |
| 1670.1              | 1700.1      | 15.39              | 16.44 | 17.17 |
| 1750.1              | 1780.1      | 15.08              | 16.03 | 16.63 |
| 1850.1              | 1880.1      | 14.77              | 15.71 | 16.01 |
| 1930.1              | 1960.1      | 14.31              | 15.27 | 15.62 |
| 2030.1              | 2060.1      | 13.93              | 14.78 | 15.09 |
| 2110.1              | 2140.1      | 13.72              | 14.59 | 15.00 |
| 2210.1              | 2240.1      | 13.44              | 14.37 | 14.84 |
| 2290.1              | 2320.1      | 13.54              | 14.38 | 14.91 |
| 2390.1              | 2420.1      | 13.51              | 14.33 | 14.84 |
| 2470.1              | 2500.1      | 13.40              | 14.40 | 15.03 |
| 2570.1              | 2600.1      | 13.49              | 14.56 | 15.34 |
| 2650.1              | 2680.1      | 13.60              | 14.79 | 15.56 |
| 2750.1              | 2780.1      | 13.88              | 15.22 | 16.28 |
| 2830.1              | 2860.1      | 14.04              | 15.44 | 16.81 |
| 2930.1              | 2960.1      | 14.38              | 15.67 | 17.49 |
| 3010.1              | 3040.1      | 14.55              | 16.02 | 18.01 |
| 3110.1              | 3140.1      | 14.97              | 16.81 | 19.77 |
| 3190.1              | 3220.1      | 15.68              | 17.74 | 21.17 |
| 3290.1              | 3320.1      | 16.51              | 18.86 | 22.35 |
| 3370.1              | 3400.1      | 17.27              | 19.61 | 22.44 |
| 3470.1              | 3500.1      | 18.49              | 21.06 | 23.22 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | COMPRESSION<br>@RF IN=+9dBm<br>(dB) |      |      |
|---------------------|-------------|-------------------------------------|------|------|
|                     |             | @LO (dBm)                           |      |      |
|                     |             | +10                                 | +13  | +16  |
| 10.1                | 40.1        | 1.57                                | 1.05 | 0.85 |
| 90.1                | 120.1       | 1.60                                | 1.17 | 0.84 |
| 170.1               | 200.1       | 1.62                                | 1.19 | 0.88 |
| 250.1               | 280.1       | 1.52                                | 1.11 | 0.82 |
| 330.1               | 360.1       | 1.55                                | 1.16 | 0.89 |
| 410.1               | 440.1       | 1.59                                | 1.22 | 0.94 |
| 490.1               | 520.1       | 1.64                                | 1.30 | 1.01 |
| 590.1               | 620.1       | 1.70                                | 1.38 | 1.09 |
| 670.1               | 700.1       | 1.72                                | 1.40 | 1.11 |
| 770.1               | 800.1       | 1.83                                | 1.50 | 1.19 |
| 850.1               | 880.1       | 1.97                                | 1.63 | 1.32 |
| 950.1               | 980.1       | 1.99                                | 1.63 | 1.33 |
| 1030.1              | 1060.1      | 2.00                                | 1.64 | 1.36 |
| 1130.1              | 1160.1      | 1.96                                | 1.59 | 1.31 |
| 1210.1              | 1240.1      | 1.96                                | 1.58 | 1.30 |
| 1310.1              | 1340.1      | 2.03                                | 1.64 | 1.36 |
| 1390.1              | 1420.1      | 2.03                                | 1.64 | 1.36 |
| 1490.1              | 1520.1      | 2.02                                | 1.65 | 1.39 |
| 1570.1              | 1600.1      | 2.01                                | 1.66 | 1.42 |
| 1670.1              | 1700.1      | 1.98                                | 1.66 | 1.39 |
| 1750.1              | 1780.1      | 1.92                                | 1.63 | 1.39 |
| 1850.1              | 1880.1      | 1.92                                | 1.66 | 1.40 |
| 1930.1              | 1960.1      | 1.89                                | 1.61 | 1.38 |
| 2030.1              | 2060.1      | 1.87                                | 1.58 | 1.32 |
| 2110.1              | 2140.1      | 1.78                                | 1.47 | 1.23 |
| 2210.1              | 2240.1      | 1.82                                | 1.52 | 1.27 |
| 2290.1              | 2320.1      | 1.79                                | 1.44 | 1.20 |
| 2390.1              | 2420.1      | 1.74                                | 1.38 | 1.14 |
| 2470.1              | 2500.1      | 1.68                                | 1.33 | 1.08 |
| 2570.1              | 2600.1      | 1.60                                | 1.32 | 1.08 |
| 2650.1              | 2680.1      | 1.68                                | 1.26 | 1.00 |
| 2750.1              | 2780.1      | 1.57                                | 1.13 | 0.88 |
| 2830.1              | 2860.1      | 1.45                                | 1.00 | 0.80 |
| 2930.1              | 2960.1      | 1.27                                | 0.89 | 0.67 |
| 3010.1              | 3040.1      | 1.26                                | 0.86 | 0.68 |
| 3110.1              | 3140.1      | 1.06                                | 0.74 | 0.59 |
| 3190.1              | 3220.1      | 0.94                                | 0.65 | 0.56 |
| 3290.1              | 3320.1      | 0.82                                | 0.59 | 0.48 |
| 3370.1              | 3400.1      | 0.79                                | 0.55 | 0.44 |
| 3470.1              | 3500.1      | 0.68                                | 0.47 | 0.38 |

# Frequency Mixer

**RMS-25MHW+**

## Typical Performance Data

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=1250.1MHz<br>(dB) |
|----------------------|-------------|------------------------------------------------------------------|
|                      |             | @LO (dBm)                                                        |
|                      |             | <b>+13</b>                                                       |
| 1240.0               | 10.1        | 7.00                                                             |
| 1210.0               | 40.1        | 7.05                                                             |
| 1180.0               | 70.1        | 7.12                                                             |
| 1150.0               | 100.1       | 7.15                                                             |
| 1120.0               | 130.1       | 7.15                                                             |
| 1090.0               | 160.1       | 7.21                                                             |
| 1060.0               | 190.1       | 7.28                                                             |
| 1030.0               | 220.1       | 7.22                                                             |
| 1000.0               | 250.1       | 7.25                                                             |
| 970.0                | 280.1       | 7.34                                                             |
| 940.0                | 310.1       | 7.29                                                             |
| 910.0                | 340.1       | 7.29                                                             |
| 880.0                | 370.1       | 7.31                                                             |
| 850.0                | 400.1       | 7.31                                                             |
| 820.0                | 430.1       | 7.30                                                             |
| 790.0                | 460.1       | 7.23                                                             |
| 760.0                | 490.1       | 7.23                                                             |
| 730.0                | 520.1       | 7.23                                                             |
| 700.0                | 550.1       | 7.17                                                             |
| 670.0                | 580.1       | 7.16                                                             |
| 640.0                | 610.1       | 7.18                                                             |
| 610.0                | 640.1       | 7.17                                                             |
| 580.0                | 670.1       | 7.15                                                             |
| 550.0                | 700.1       | 7.12                                                             |
| 520.0                | 730.1       | 7.18                                                             |
| 490.0                | 760.1       | 7.14                                                             |
| 460.0                | 790.1       | 7.08                                                             |
| 430.0                | 820.1       | 7.12                                                             |
| 390.0                | 860.1       | 7.01                                                             |
| 360.0                | 890.1       | 7.04                                                             |
| 320.0                | 930.1       | 7.10                                                             |
| 290.0                | 960.1       | 7.11                                                             |
| 250.0                | 1000.1      | 7.16                                                             |
| 220.0                | 1030.1      | 7.17                                                             |
| 180.0                | 1070.1      | 7.27                                                             |
| 150.0                | 1100.1      | 7.22                                                             |
| 110.0                | 1140.1      | 7.26                                                             |
| 80.0                 | 1170.1      | 7.24                                                             |
| 40.0                 | 1210.1      | 7.22                                                             |
| 10.0                 | 1240.1      | 7.05                                                             |

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=10.1MHz<br>(dB) |
|----------------------|-------------|----------------------------------------------------------------|
|                      |             | @LO (dBm)                                                      |
|                      |             | <b>+13</b>                                                     |
| 10.0                 | 20.1        | 6.57                                                           |
| 110.0                | 120.1       | 6.68                                                           |
| 210.0                | 220.1       | 6.70                                                           |
| 310.0                | 320.1       | 6.68                                                           |
| 410.0                | 420.1       | 6.77                                                           |
| 510.0                | 520.1       | 6.65                                                           |
| 610.0                | 620.1       | 6.79                                                           |
| 710.0                | 720.1       | 6.92                                                           |
| 810.0                | 820.1       | 6.79                                                           |
| 910.0                | 920.1       | 6.70                                                           |
| 1010.0               | 1020.1      | 6.89                                                           |
| 1110.0               | 1120.1      | 7.08                                                           |
| 1210.0               | 1220.1      | 7.20                                                           |
| 1310.0               | 1320.1      | 7.28                                                           |
| 1410.0               | 1420.1      | 7.40                                                           |
| 1510.0               | 1520.1      | 7.46                                                           |
| 1590.0               | 1600.1      | 7.40                                                           |
| 1690.0               | 1700.1      | 7.38                                                           |
| 1770.0               | 1780.1      | 7.27                                                           |
| 1870.0               | 1880.1      | 7.36                                                           |
| 1950.0               | 1960.1      | 7.30                                                           |
| 2050.0               | 2060.1      | 7.43                                                           |
| 2130.0               | 2140.1      | 7.60                                                           |
| 2230.0               | 2240.1      | 7.68                                                           |
| 2310.0               | 2320.1      | 7.68                                                           |
| 2410.0               | 2420.1      | 7.90                                                           |
| 2490.0               | 2500.1      | 8.03                                                           |
| 2590.0               | 2600.1      | 8.12                                                           |
| 2670.0               | 2680.1      | 8.20                                                           |
| 2770.0               | 2780.1      | 8.36                                                           |
| 2850.0               | 2860.1      | 8.46                                                           |
| 2950.0               | 2960.1      | 8.65                                                           |
| 3030.0               | 3040.1      | 8.81                                                           |
| 3130.0               | 3140.1      | 8.87                                                           |
| 3210.0               | 3220.1      | 8.99                                                           |
| 3310.0               | 3320.1      | 9.28                                                           |
| 3390.0               | 3400.1      | 9.51                                                           |
| 3490.0               | 3500.1      | 9.71                                                           |
| 3570.0               | 3580.1      | 9.91                                                           |
| 3670.0               | 3680.1      | 10.10                                                          |

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=2500.1001MHz<br>(dB) |
|----------------------|-------------|---------------------------------------------------------------------|
|                      |             | @LO (dBm)                                                           |
|                      |             | <b>+13</b>                                                          |
| 2490.0               | 10.1        | 8.60                                                                |
| 2429.5               | 70.6        | 8.52                                                                |
| 2369.0               | 131.1       | 8.41                                                                |
| 2308.5               | 191.6       | 8.34                                                                |
| 2248.0               | 252.1       | 8.29                                                                |
| 2187.6               | 312.5       | 8.20                                                                |
| 2127.1               | 373.0       | 8.21                                                                |
| 2066.6               | 433.5       | 8.14                                                                |
| 2006.1               | 494.0       | 8.06                                                                |
| 1945.6               | 554.5       | 8.05                                                                |
| 1885.1               | 615.0       | 7.94                                                                |
| 1824.6               | 675.5       | 7.96                                                                |
| 1764.1               | 736.0       | 7.90                                                                |
| 1703.7               | 796.4       | 7.86                                                                |
| 1643.2               | 856.9       | 7.83                                                                |
| 1582.7               | 917.4       | 7.74                                                                |
| 1522.2               | 977.9       | 7.70                                                                |
| 1461.7               | 1038.4      | 7.57                                                                |
| 1401.2               | 1098.9      | 7.55                                                                |
| 1340.7               | 1159.4      | 7.44                                                                |
| 1280.2               | 1219.9      | 7.43                                                                |
| 1219.8               | 1280.3      | 7.30                                                                |
| 1159.3               | 1340.8      | 7.32                                                                |
| 1098.8               | 1401.3      | 7.31                                                                |
| 1038.3               | 1461.8      | 7.29                                                                |
| 977.8                | 1522.3      | 7.28                                                                |
| 917.3                | 1582.8      | 7.25                                                                |
| 856.8                | 1643.3      | 7.34                                                                |
| 776.2                | 1723.9      | 7.28                                                                |
| 715.7                | 1784.4      | 7.37                                                                |
| 635.0                | 1865.1      | 7.30                                                                |
| 574.6                | 1925.5      | 7.35                                                                |
| 493.9                | 2006.2      | 7.29                                                                |
| 433.4                | 2066.7      | 7.29                                                                |
| 352.8                | 2147.3      | 7.22                                                                |
| 292.3                | 2207.8      | 7.23                                                                |
| 211.6                | 2288.5      | 7.23                                                                |
| 151.1                | 2349.0      | 7.23                                                                |
| 70.5                 | 2429.6      | 7.28                                                                |
| 10.0                 | 2490.1      | 7.25                                                                |

REV. X2

RMS-25MHW+

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# Frequency Mixer

# RMS-25MHW+

## Typical Performance Data

| LO<br>(MHz) | LO-RF ISOLATION<br>(dB) |       |       | LO-IF ISOLATION<br>(dB) |       |       |
|-------------|-------------------------|-------|-------|-------------------------|-------|-------|
|             | @LO (dBm)               |       |       | @LO (dBm)               |       |       |
|             | +10                     | +13   | +16   | +10                     | +13   | +16   |
| 40.1        | 48.89                   | 50.31 | 50.63 | 33.04                   | 36.23 | 38.85 |
| 120.1       | 46.12                   | 44.67 | 43.89 | 32.82                   | 35.55 | 37.41 |
| 200.1       | 41.71                   | 40.48 | 39.85 | 32.59                   | 34.96 | 36.03 |
| 280.1       | 38.75                   | 37.69 | 37.13 | 32.97                   | 34.72 | 34.85 |
| 360.1       | 36.59                   | 35.75 | 35.38 | 33.54                   | 34.29 | 33.60 |
| 440.1       | 34.91                   | 34.28 | 34.04 | 33.99                   | 33.74 | 32.57 |
| 520.1       | 33.61                   | 33.27 | 33.16 | 34.53                   | 33.04 | 31.49 |
| 620.1       | 32.26                   | 32.16 | 32.26 | 34.77                   | 32.23 | 30.43 |
| 700.1       | 31.37                   | 31.60 | 31.85 | 34.96                   | 31.67 | 29.65 |
| 800.1       | 30.82                   | 31.14 | 31.52 | 34.70                   | 30.90 | 28.83 |
| 880.1       | 30.93                   | 31.45 | 31.91 | 34.54                   | 30.45 | 28.31 |
| 980.1       | 31.01                   | 31.49 | 31.94 | 33.65                   | 29.54 | 27.49 |
| 1060.1      | 31.45                   | 31.96 | 32.39 | 32.51                   | 28.76 | 26.74 |
| 1160.1      | 32.00                   | 32.69 | 33.22 | 31.91                   | 28.28 | 26.30 |
| 1240.1      | 32.41                   | 33.22 | 33.92 | 31.84                   | 28.30 | 26.39 |
| 1340.1      | 33.47                   | 34.24 | 34.93 | 31.98                   | 28.51 | 26.50 |
| 1420.1      | 34.16                   | 35.04 | 35.42 | 32.34                   | 29.16 | 26.91 |
| 1520.1      | 35.30                   | 36.43 | 36.68 | 31.51                   | 29.41 | 27.29 |
| 1600.1      | 36.06                   | 37.32 | 37.36 | 30.57                   | 29.25 | 27.44 |
| 1700.1      | 37.06                   | 37.83 | 37.70 | 29.37                   | 29.10 | 27.85 |
| 1780.1      | 38.45                   | 38.54 | 37.50 | 28.48                   | 28.85 | 28.10 |
| 1880.1      | 38.92                   | 39.33 | 37.78 | 27.48                   | 28.61 | 28.59 |
| 1960.1      | 39.20                   | 39.30 | 37.76 | 27.01                   | 28.60 | 29.11 |
| 2060.1      | 38.79                   | 38.67 | 36.94 | 26.75                   | 29.01 | 30.44 |
| 2140.1      | 37.90                   | 37.66 | 36.13 | 26.54                   | 29.27 | 31.67 |
| 2240.1      | 36.01                   | 35.27 | 34.14 | 26.71                   | 30.11 | 33.97 |
| 2320.1      | 34.19                   | 33.18 | 32.09 | 26.92                   | 30.61 | 35.31 |
| 2420.1      | 32.13                   | 30.88 | 29.71 | 27.22                   | 30.85 | 35.23 |
| 2500.1      | 30.72                   | 29.41 | 28.02 | 27.44                   | 30.70 | 33.73 |
| 2600.1      | 29.48                   | 28.09 | 26.72 | 28.11                   | 30.75 | 32.32 |
| 2680.1      | 28.18                   | 27.10 | 25.90 | 28.68                   | 30.68 | 31.34 |
| 2780.1      | 26.71                   | 25.75 | 25.12 | 29.48                   | 30.50 | 30.47 |
| 2860.1      | 25.72                   | 24.85 | 24.51 | 30.12                   | 30.41 | 30.05 |
| 2960.1      | 24.41                   | 24.11 | 23.64 | 30.21                   | 30.09 | 29.11 |
| 3040.1      | 24.03                   | 23.82 | 23.86 | 30.40                   | 29.77 | 28.97 |
| 3140.1      | 23.35                   | 23.28 | 23.72 | 30.26                   | 29.52 | 28.94 |
| 3220.1      | 23.13                   | 23.29 | 23.93 | 29.95                   | 29.30 | 28.89 |
| 3320.1      | 22.82                   | 23.47 | 24.18 | 29.11                   | 28.72 | 28.15 |
| 3400.1      | 23.00                   | 23.86 | 24.66 | 28.65                   | 28.18 | 27.61 |
| 3500.1      | 23.28                   | 24.17 | 25.15 | 28.04                   | 27.66 | 27.41 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF-IF ISOLATION<br>(dB) |       |       |
|---------------------|-------------|-------------------------|-------|-------|
|                     |             | @LO (dBm)               |       |       |
|                     |             | +10                     | +13   | +16   |
| 10.1                | 40.1        | 21.89                   | 21.54 | 21.52 |
| 90.1                | 120.1       | 22.24                   | 22.09 | 21.94 |
| 170.1               | 200.1       | 22.51                   | 22.40 | 22.27 |
| 250.1               | 280.1       | 22.80                   | 22.79 | 22.91 |
| 330.1               | 360.1       | 23.19                   | 23.25 | 23.51 |
| 410.1               | 440.1       | 24.07                   | 24.22 | 24.39 |
| 490.1               | 520.1       | 24.86                   | 24.97 | 25.13 |
| 590.1               | 620.1       | 26.18                   | 26.35 | 26.45 |
| 670.1               | 700.1       | 27.51                   | 27.59 | 27.86 |
| 770.1               | 800.1       | 29.84                   | 29.55 | 29.42 |
| 850.1               | 880.1       | 32.19                   | 31.53 | 31.26 |
| 950.1               | 980.1       | 34.52                   | 33.15 | 32.41 |
| 1030.1              | 1060.1      | 36.02                   | 34.47 | 33.60 |
| 1130.1              | 1160.1      | 39.30                   | 38.15 | 37.45 |
| 1210.1              | 1240.1      | 43.56                   | 45.89 | 46.96 |
| 1310.1              | 1340.1      | 37.01                   | 38.88 | 40.20 |
| 1390.1              | 1420.1      | 32.66                   | 33.45 | 34.07 |
| 1490.1              | 1520.1      | 29.34                   | 29.74 | 30.12 |
| 1570.1              | 1600.1      | 28.23                   | 28.62 | 28.97 |
| 1670.1              | 1700.1      | 27.35                   | 27.99 | 28.28 |
| 1750.1              | 1780.1      | 26.65                   | 27.55 | 27.99 |
| 1850.1              | 1880.1      | 26.16                   | 27.27 | 27.91 |
| 1930.1              | 1960.1      | 26.37                   | 27.49 | 28.30 |
| 2030.1              | 2060.1      | 27.04                   | 28.20 | 29.05 |
| 2110.1              | 2140.1      | 27.36                   | 28.19 | 28.81 |
| 2210.1              | 2240.1      | 26.96                   | 27.37 | 27.65 |
| 2290.1              | 2320.1      | 26.24                   | 26.30 | 26.43 |
| 2390.1              | 2420.1      | 24.96                   | 24.65 | 24.64 |
| 2470.1              | 2500.1      | 23.75                   | 23.30 | 23.17 |
| 2570.1              | 2600.1      | 22.46                   | 21.75 | 21.56 |
| 2650.1              | 2680.1      | 21.22                   | 20.61 | 20.36 |
| 2750.1              | 2780.1      | 20.26                   | 19.58 | 19.21 |
| 2830.1              | 2860.1      | 19.54                   | 19.03 | 18.60 |
| 2930.1              | 2960.1      | 18.68                   | 18.36 | 18.00 |
| 3010.1              | 3040.1      | 18.26                   | 18.02 | 17.81 |
| 3110.1              | 3140.1      | 17.89                   | 17.77 | 17.62 |
| 3190.1              | 3220.1      | 17.87                   | 17.81 | 17.66 |
| 3290.1              | 3320.1      | 18.00                   | 18.07 | 17.97 |
| 3370.1              | 3400.1      | 18.13                   | 18.32 | 18.36 |
| 3470.1              | 3500.1      | 18.25                   | 18.53 | 18.73 |

# Frequency Mixer

# RMS-25MHW+

## 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=2500.1001MHz<br>(:1) |      |      |
|---------------------|-------------|-----------------|------|------|-------------|-----------------|------|------|----------------------|-------------------------------------|------|------|
|                     |             | @LO (dBm)       |      |      |             | @LO (dBm)       |      |      |                      | @LO (dBm)                           |      |      |
|                     |             | +10             | +13  | +16  |             | +10             | +13  | +16  |                      | +10                                 | +13  | +16  |
| 10.1                | 40.1        | 1.42            | 1.42 | 1.66 | 110.0       | 1.65            | 2.38 | 3.31 | 10.1                 | 1.12                                | 1.10 | 1.15 |
| 90.1                | 120.1       | 1.04            | 1.11 | 1.18 | 190.0       | 1.60            | 2.26 | 3.10 | 70.1                 | 1.10                                | 1.01 | 1.08 |
| 170.1               | 200.1       | 1.03            | 1.06 | 1.12 | 270.0       | 1.59            | 2.22 | 3.01 | 130.1                | 1.12                                | 1.04 | 1.09 |
| 250.1               | 280.1       | 1.05            | 1.03 | 1.09 | 350.0       | 1.61            | 2.22 | 2.98 | 190.1                | 1.11                                | 1.07 | 1.13 |
| 330.1               | 360.1       | 1.08            | 1.00 | 1.06 | 430.0       | 1.63            | 2.21 | 2.95 | 250.1                | 1.16                                | 1.08 | 1.09 |
| 410.1               | 440.1       | 1.10            | 1.02 | 1.04 | 510.0       | 1.64            | 2.19 | 2.90 | 310.1                | 1.16                                | 1.10 | 1.12 |
| 490.1               | 520.1       | 1.15            | 1.07 | 1.03 | 590.0       | 1.64            | 2.15 | 2.82 | 370.1                | 1.15                                | 1.08 | 1.10 |
| 590.1               | 620.1       | 1.24            | 1.14 | 1.09 | 670.0       | 1.61            | 2.09 | 2.73 | 430.1                | 1.21                                | 1.12 | 1.10 |
| 670.1               | 700.1       | 1.30            | 1.20 | 1.14 | 750.0       | 1.59            | 2.03 | 2.65 | 490.1                | 1.21                                | 1.12 | 1.11 |
| 770.1               | 800.1       | 1.37            | 1.27 | 1.21 | 830.0       | 1.59            | 1.99 | 2.57 | 550.1                | 1.20                                | 1.09 | 1.06 |
| 850.1               | 880.1       | 1.45            | 1.35 | 1.29 | 910.0       | 1.62            | 1.95 | 2.49 | 610.1                | 1.23                                | 1.13 | 1.09 |
| 950.1               | 980.1       | 1.52            | 1.42 | 1.35 | 990.0       | 1.66            | 1.93 | 2.42 | 670.1                | 1.24                                | 1.12 | 1.08 |
| 1030.1              | 1060.1      | 1.60            | 1.49 | 1.42 | 1070.0      | 1.71            | 1.90 | 2.33 | 730.1                | 1.26                                | 1.13 | 1.05 |
| 1130.1              | 1160.1      | 1.69            | 1.58 | 1.51 | 1150.0      | 1.73            | 1.84 | 2.22 | 790.1                | 1.25                                | 1.12 | 1.05 |
| 1210.1              | 1240.1      | 1.75            | 1.64 | 1.57 | 1230.0      | 1.77            | 1.78 | 2.10 | 850.1                | 1.26                                | 1.12 | 1.03 |
| 1310.1              | 1340.1      | 1.82            | 1.71 | 1.64 | 1330.0      | 1.81            | 1.71 | 1.96 | 910.1                | 1.31                                | 1.17 | 1.07 |
| 1390.1              | 1420.1      | 1.85            | 1.73 | 1.66 | 1410.0      | 1.88            | 1.67 | 1.86 | 970.1                | 1.30                                | 1.16 | 1.06 |
| 1490.1              | 1520.1      | 1.91            | 1.78 | 1.70 | 1510.0      | 1.90            | 1.61 | 1.74 | 1030.1               | 1.30                                | 1.16 | 1.08 |
| 1570.1              | 1600.1      | 1.92            | 1.79 | 1.71 | 1590.0      | 1.90            | 1.56 | 1.64 | 1090.1               | 1.33                                | 1.19 | 1.10 |
| 1670.1              | 1700.1      | 1.92            | 1.78 | 1.70 | 1690.0      | 1.87            | 1.47 | 1.51 | 1150.1               | 1.37                                | 1.23 | 1.15 |
| 1750.1              | 1780.1      | 1.91            | 1.77 | 1.68 | 1770.0      | 1.83            | 1.39 | 1.41 | 1210.1               | 1.37                                | 1.24 | 1.17 |
| 1850.1              | 1880.1      | 1.87            | 1.72 | 1.63 | 1870.0      | 1.80            | 1.30 | 1.30 | 1270.1               | 1.38                                | 1.25 | 1.19 |
| 1930.1              | 1960.1      | 1.84            | 1.70 | 1.60 | 1950.0      | 1.75            | 1.23 | 1.23 | 1330.1               | 1.40                                | 1.28 | 1.22 |
| 2030.1              | 2060.1      | 1.78            | 1.63 | 1.54 | 2050.0      | 1.71            | 1.17 | 1.18 | 1390.1               | 1.43                                | 1.31 | 1.25 |
| 2110.1              | 2140.1      | 1.74            | 1.59 | 1.50 | 2130.0      | 1.66            | 1.14 | 1.19 | 1450.1               | 1.43                                | 1.33 | 1.29 |
| 2210.1              | 2240.1      | 1.64            | 1.49 | 1.41 | 2230.0      | 1.62            | 1.15 | 1.25 | 1510.1               | 1.42                                | 1.32 | 1.28 |
| 2290.1              | 2320.1      | 1.56            | 1.42 | 1.33 | 2310.0      | 1.61            | 1.19 | 1.31 | 1590.1               | 1.46                                | 1.37 | 1.34 |
| 2390.1              | 2420.1      | 1.45            | 1.32 | 1.24 | 2410.0      | 1.57            | 1.24 | 1.39 | 1650.1               | 1.46                                | 1.39 | 1.36 |
| 2470.1              | 2500.1      | 1.36            | 1.25 | 1.17 | 2490.0      | 1.57            | 1.29 | 1.45 | 1730.1               | 1.51                                | 1.44 | 1.42 |
| 2570.1              | 2600.1      | 1.26            | 1.16 | 1.09 | 2590.0      | 1.53            | 1.35 | 1.53 | 1790.1               | 1.50                                | 1.43 | 1.41 |
| 2650.1              | 2680.1      | 1.18            | 1.09 | 1.06 | 2670.0      | 1.49            | 1.39 | 1.59 | 1870.1               | 1.55                                | 1.50 | 1.49 |
| 2750.1              | 2780.1      | 1.11            | 1.08 | 1.12 | 2770.0      | 1.46            | 1.46 | 1.69 | 1930.1               | 1.55                                | 1.51 | 1.51 |
| 2830.1              | 2860.1      | 1.12            | 1.18 | 1.24 | 2850.0      | 1.44            | 1.53 | 1.79 | 2010.1               | 1.60                                | 1.57 | 1.56 |
| 2930.1              | 2960.1      | 1.22            | 1.30 | 1.39 | 2950.0      | 1.46            | 1.64 | 1.92 | 2070.1               | 1.62                                | 1.59 | 1.59 |
| 3010.1              | 3040.1      | 1.34            | 1.44 | 1.53 | 3030.0      | 1.50            | 1.72 | 2.02 | 2150.1               | 1.66                                | 1.64 | 1.64 |
| 3110.1              | 3140.1      | 1.48            | 1.61 | 1.72 | 3130.0      | 1.54            | 1.82 | 2.13 | 2210.1               | 1.72                                | 1.71 | 1.71 |
| 3190.1              | 3220.1      | 1.60            | 1.74 | 1.86 | 3210.0      | 1.61            | 1.91 | 2.22 | 2290.1               | 1.77                                | 1.76 | 1.76 |
| 3290.1              | 3320.1      | 1.78            | 1.93 | 2.06 | 3310.0      | 1.70            | 2.03 | 2.34 | 2350.1               | 1.81                                | 1.82 | 1.83 |
| 3370.1              | 3400.1      | 1.89            | 2.05 | 2.19 | 3390.0      | 1.80            | 2.14 | 2.46 | 2430.1               | 1.87                                | 1.87 | 1.89 |
| 3470.1              | 3500.1      | 2.11            | 2.27 | 2.40 | 3490.0      | 1.89            | 2.24 | 2.56 | 2490.1               | 1.99                                | 2.00 | 2.01 |

## Harmonics Tables

### RF HARMONICS ORDER

|        | (-dBm) | (-dBc) |     |     |     |     |     |     |     |     |     |     |
|--------|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0      | -      | -      | 2   | 12  | 13  | 25  | 17  | 35  | 27  | 34  | 22  | 44  |
| 1      | -      | 40     | +0  | 33  | 15  | 37  | 20  | 35  | 25  | 43  | 45  | 35  |
| 2      | 69     | 62     | 57  | 60  | 53  | 61  | 51  | 59  | 50  | 62  | 52  | 55  |
| 3      | >90    | 72     | 56  | 68  | 58  | 69  | 60  | 65  | 74  | 63  | 64  | >77 |
| 4      | >90    | >77    | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 |
| 5      | >90    | >77    | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 |
| 6      | >90    | >77    | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 |
| 7      | >90    | >77    | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 |
| 8      | >90    | >77    | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 |
| 9      | >90    | >77    | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 |
| 10     | >90    | >77    | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 | >77 |
| RF CAL |        | 0      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |

Test conditions:

RF IN: 1250.1 MHz; -6.00 dBm.

LO IN: 1280.1 MHz; +13.00 dBm

IF OUT: 30 MHz; -13.41 dBm

### RF HARMONICS ORDER

|        | (-dBm) | (-dBc) |     |     |     |     |     |     |     |     |     |    |
|--------|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 0      | -      | -      | 12  | 23  | 25  | 36  | 30  | 53  | 40  | 58  | 41  | 53 |
| 1      | -      | 33     | +0  | 32  | 14  | 38  | 22  | 39  | 27  | 50  | 47  | 47 |
| 2      | 49     | 40     | 48  | 45  | 42  | 54  | 40  | 53  | 42  | 57  | 53  | 53 |
| 3      | 87     | 44     | 37  | 44  | 42  | 51  | 61  | 54  | 47  | 49  | 49  | 60 |
| 4      | >90    | 51     | 50  | 54  | 57  | 59  | 57  | 59  | 57  | 69  | 59  | 75 |
| 5      | >90    | 55     | 59  | 73  | 51  | 64  | 50  | 58  | 57  | 57  | 62  | 55 |
| 6      | >90    | 70     | 68  | 74  | 71  | 74  | 79  | 69  | 77  | 74  | 70  | 72 |
| 7      | >90    | 78     | 75  | 80  | 70  | 68  | 76  | 68  | 76  | 73  | 75  | 79 |
| 8      | >90    | >87    | >87 | >87 | 86  | >87 | 78  | >87 | 77  | >87 | 78  | 85 |
| 9      | >90    | >87    | >87 | >87 | 82  | 86  | 81  | 77  | 84  | 77  | 84  | 74 |
| 10     | >90    | >87    | >87 | >87 | >87 | >87 | >87 | 85  | >87 | 83  | >87 | 82 |
| RF CAL | 0      | 1      | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |    |

### LO HARMONICS ORDER

Test conditions:

RF IN: 1250.1 MHz; 4.00 dBm.

LO IN: 1280.1 MHz; +13.00 dBm

IF OUT: 30 MHz; -3.46 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.