

# Frequency Mixer

# SRA-2500SH

## Typical Performance Data

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>IF FIXED<br>@IF(OUT)=30MHz<br>(dB) |       |      |
|---------------------|-------------|-------------------------------------------------------|-------|------|
|                     |             | @LO (dBm)                                             |       |      |
|                     |             | +14                                                   | +17   | +20  |
| 10.1                | 40.1        | 6.27                                                  | 5.73  | 5.68 |
| 90.1                | 120.1       | 6.68                                                  | 6.10  | 6.04 |
| 170.1               | 200.1       | 6.84                                                  | 6.25  | 6.19 |
| 250.1               | 280.1       | 7.14                                                  | 6.54  | 6.39 |
| 330.1               | 360.1       | 7.29                                                  | 6.61  | 6.39 |
| 410.1               | 440.1       | 7.42                                                  | 6.60  | 6.31 |
| 490.1               | 520.1       | 7.67                                                  | 6.74  | 6.43 |
| 570.1               | 600.1       | 8.08                                                  | 6.84  | 6.48 |
| 650.1               | 680.1       | 8.31                                                  | 6.83  | 6.45 |
| 730.1               | 760.1       | 8.64                                                  | 7.25  | 6.77 |
| 890.1               | 920.1       | 8.06                                                  | 7.21  | 6.81 |
| 970.1               | 1000.1      | 7.52                                                  | 6.98  | 6.69 |
| 1050.1              | 1080.1      | 7.08                                                  | 6.68  | 6.47 |
| 1130.1              | 1160.1      | 6.74                                                  | 6.39  | 6.24 |
| 1210.1              | 1240.1      | 6.64                                                  | 6.27  | 6.15 |
| 1290.1              | 1320.1      | 6.76                                                  | 6.35  | 6.22 |
| 1370.1              | 1400.1      | 7.10                                                  | 6.63  | 6.46 |
| 1450.1              | 1480.1      | 7.72                                                  | 7.11  | 6.78 |
| 1530.1              | 1560.1      | 8.63                                                  | 7.61  | 7.06 |
| 1610.1              | 1640.1      | 9.34                                                  | 7.94  | 7.27 |
| 1690.1              | 1720.1      | 9.67                                                  | 8.16  | 7.40 |
| 1770.1              | 1800.1      | 9.48                                                  | 8.06  | 7.42 |
| 1850.1              | 1880.1      | 9.45                                                  | 8.11  | 7.54 |
| 1930.1              | 1960.1      | 9.53                                                  | 8.25  | 7.74 |
| 2010.1              | 2040.1      | 9.69                                                  | 8.57  | 8.05 |
| 2090.1              | 2120.1      | 9.80                                                  | 8.76  | 8.30 |
| 2170.1              | 2200.1      | 9.60                                                  | 8.69  | 8.24 |
| 2250.1              | 2280.1      | 9.20                                                  | 8.39  | 7.99 |
| 2310.1              | 2340.1      | 9.03                                                  | 8.34  | 8.00 |
| 2390.1              | 2420.1      | 9.16                                                  | 8.32  | 8.00 |
| 2450.1              | 2480.1      | 9.25                                                  | 8.25  | 7.90 |
| 2530.1              | 2560.1      | 9.60                                                  | 8.45  | 8.01 |
| 2590.1              | 2620.1      | 9.99                                                  | 8.76  | 8.26 |
| 2670.1              | 2700.1      | 10.40                                                 | 8.94  | 8.37 |
| 2730.1              | 2760.1      | 10.49                                                 | 9.01  | 8.42 |
| 2810.1              | 2840.1      | 10.93                                                 | 9.35  | 8.73 |
| 2870.1              | 2900.1      | 11.88                                                 | 9.84  | 9.07 |
| 2950.1              | 2980.1      | 12.52                                                 | 10.20 | 9.41 |
| 3010.1              | 3040.1      | 12.86                                                 | 10.48 | 9.81 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | IP3 INPUT<br>(dBm) |       |       |
|---------------------|-------------|--------------------|-------|-------|
|                     |             | @LO (dBm)          |       |       |
|                     |             | +14                | +17   | +20   |
| 10.1                | 40.1        | 29.29              | 31.68 | 33.14 |
| 90.1                | 120.1       | 25.79              | 27.56 | 31.60 |
| 170.1               | 200.1       | 25.95              | 26.61 | 26.46 |
| 250.1               | 280.1       | 24.05              | 24.48 | 25.19 |
| 330.1               | 360.1       | 22.43              | 24.45 | 25.94 |
| 410.1               | 440.1       | 24.33              | 24.41 | 27.60 |
| 490.1               | 520.1       | 23.70              | 27.10 | 30.94 |
| 570.1               | 600.1       | 23.04              | 26.35 | 34.81 |
| 650.1               | 680.1       | 22.29              | 27.25 | 34.26 |
| 730.1               | 760.1       | 22.20              | 31.90 | 31.11 |
| 890.1               | 920.1       | 21.90              | 24.21 | 26.35 |
| 970.1               | 1000.1      | 22.31              | 24.71 | 24.97 |
| 1050.1              | 1080.1      | 23.51              | 24.95 | 27.17 |
| 1130.1              | 1160.1      | 23.81              | 25.46 | 28.83 |
| 1210.1              | 1240.1      | 22.49              | 26.24 | 27.71 |
| 1290.1              | 1320.1      | 20.53              | 27.29 | 27.46 |
| 1370.1              | 1400.1      | 19.65              | 28.29 | 29.40 |
| 1450.1              | 1480.1      | 19.67              | 27.88 | 28.51 |
| 1530.1              | 1560.1      | 20.99              | 29.25 | 27.95 |
| 1610.1              | 1640.1      | 22.63              | 28.06 | 27.59 |
| 1690.1              | 1720.1      | 23.08              | 25.84 | 30.94 |
| 1770.1              | 1800.1      | 23.14              | 24.39 | 24.86 |
| 1850.1              | 1880.1      | 21.82              | 24.22 | 25.10 |
| 1930.1              | 1960.1      | 23.36              | 25.78 | 27.46 |
| 2010.1              | 2040.1      | 24.83              | 25.59 | 30.38 |
| 2090.1              | 2120.1      | 23.36              | 26.74 | 29.47 |
| 2170.1              | 2200.1      | 22.23              | 26.84 | 29.32 |
| 2250.1              | 2280.1      | 22.07              | 25.14 | 27.27 |
| 2310.1              | 2340.1      | 21.91              | 24.07 | 22.92 |
| 2390.1              | 2420.1      | 20.79              | 24.20 | 21.95 |
| 2450.1              | 2480.1      | 20.35              | 23.34 | 21.67 |
| 2530.1              | 2560.1      | 21.40              | 22.89 | 23.06 |
| 2590.1              | 2620.1      | 20.86              | 23.73 | 26.01 |
| 2670.1              | 2700.1      | 19.98              | 23.89 | 25.84 |
| 2730.1              | 2760.1      | 18.74              | 22.88 | 25.55 |
| 2810.1              | 2840.1      | 18.49              | 21.80 | 25.24 |
| 2870.1              | 2900.1      | 18.48              | 20.77 | 24.59 |
| 2950.1              | 2980.1      | 18.75              | 19.41 | 24.25 |
| 3010.1              | 3040.1      | 18.68              | 19.98 | 25.12 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | COMPRESSION<br>@RF IN=+14dBm<br>(dB) |      |      |
|---------------------|-------------|--------------------------------------|------|------|
|                     |             | @LO (dBm)                            |      |      |
|                     |             | +14                                  | +17  | +20  |
| 10.1                | 40.1        | 1.08                                 | 0.44 | 0.20 |
| 90.1                | 120.1       | 0.80                                 | 0.32 | 0.19 |
| 170.1               | 200.1       | 0.77                                 | 0.32 | 0.19 |
| 250.1               | 280.1       | 0.64                                 | 0.23 | 0.13 |
| 330.1               | 360.1       | 0.61                                 | 0.24 | 0.19 |
| 410.1               | 440.1       | 0.68                                 | 0.38 | 0.32 |
| 490.1               | 520.1       | 0.80                                 | 0.52 | 0.39 |
| 570.1               | 600.1       | 0.69                                 | 0.59 | 0.45 |
| 650.1               | 680.1       | 0.58                                 | 0.63 | 0.47 |
| 730.1               | 760.1       | 0.46                                 | 0.50 | 0.41 |
| 890.1               | 920.1       | 0.72                                 | 0.50 | 0.42 |
| 970.1               | 1000.1      | 0.79                                 | 0.46 | 0.38 |
| 1050.1              | 1080.1      | 0.89                                 | 0.44 | 0.34 |
| 1130.1              | 1160.1      | 1.11                                 | 0.43 | 0.29 |
| 1210.1              | 1240.1      | 1.23                                 | 0.44 | 0.24 |
| 1290.1              | 1320.1      | 1.23                                 | 0.48 | 0.27 |
| 1370.1              | 1400.1      | 1.25                                 | 0.62 | 0.39 |
| 1450.1              | 1480.1      | 1.24                                 | 0.77 | 0.51 |
| 1530.1              | 1560.1      | 0.94                                 | 0.76 | 0.56 |
| 1610.1              | 1640.1      | 0.58                                 | 0.68 | 0.55 |
| 1690.1              | 1720.1      | 0.58                                 | 0.66 | 0.56 |
| 1770.1              | 1800.1      | 0.95                                 | 0.85 | 0.59 |
| 1850.1              | 1880.1      | 1.03                                 | 0.85 | 0.58 |
| 1930.1              | 1960.1      | 1.04                                 | 0.85 | 0.56 |
| 2010.1              | 2040.1      | 0.89                                 | 0.74 | 0.50 |
| 2090.1              | 2120.1      | 0.89                                 | 0.67 | 0.51 |
| 2170.1              | 2200.1      | 1.14                                 | 0.81 | 0.66 |
| 2250.1              | 2280.1      | 1.46                                 | 1.02 | 0.83 |
| 2310.1              | 2340.1      | 1.60                                 | 1.07 | 0.85 |
| 2390.1              | 2420.1      | 1.76                                 | 1.20 | 0.92 |
| 2450.1              | 2480.1      | 1.86                                 | 1.35 | 0.95 |
| 2530.1              | 2560.1      | 1.79                                 | 1.33 | 0.89 |
| 2590.1              | 2620.1      | 1.77                                 | 1.23 | 0.84 |
| 2670.1              | 2700.1      | 1.86                                 | 1.29 | 0.86 |
| 2730.1              | 2760.1      | 1.98                                 | 1.36 | 0.85 |
| 2810.1              | 2840.1      | 2.04                                 | 1.52 | 0.86 |
| 2870.1              | 2900.1      | 1.89                                 | 1.70 | 0.91 |
| 2950.1              | 2980.1      | 1.79                                 | 1.88 | 0.98 |
| 3010.1              | 3040.1      | 1.87                                 | 1.83 | 0.92 |

## 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)                                                        |
|                      |             | +17                                                              |
| 1240.0               | 10.1        | 9.18                                                             |
| 1210.0               | 40.1        | 9.22                                                             |
| 1180.0               | 70.1        | 9.29                                                             |
| 1150.0               | 100.1       | 9.23                                                             |
| 1120.0               | 130.1       | 9.10                                                             |
| 1090.0               | 160.1       | 9.09                                                             |
| 1060.0               | 190.1       | 8.98                                                             |
| 1030.0               | 220.1       | 8.81                                                             |
| 1000.0               | 250.1       | 8.74                                                             |
| 970.0                | 280.1       | 8.66                                                             |
| 940.0                | 310.1       | 8.53                                                             |
| 910.0                | 340.1       | 8.41                                                             |
| 880.0                | 370.1       | 8.23                                                             |
| 850.0                | 400.1       | 8.25                                                             |
| 820.0                | 430.1       | 8.18                                                             |
| 790.0                | 460.1       | 8.08                                                             |
| 760.0                | 490.1       | 8.04                                                             |
| 730.0                | 520.1       | 8.03                                                             |
| 700.0                | 550.1       | 7.96                                                             |
| 670.0                | 580.1       | 7.88                                                             |
| 640.0                | 610.1       | 7.90                                                             |
| 610.0                | 640.1       | 7.87                                                             |
| 580.0                | 670.1       | 7.75                                                             |
| 550.0                | 700.1       | 7.56                                                             |
| 520.0                | 730.1       | 7.50                                                             |
| 490.0                | 760.1       | 7.29                                                             |
| 460.0                | 790.1       | 7.05                                                             |
| 430.0                | 820.1       | 6.93                                                             |
| 390.0                | 860.1       | 6.58                                                             |
| 360.0                | 890.1       | 6.44                                                             |
| 320.0                | 930.1       | 6.33                                                             |
| 290.0                | 960.1       | 6.26                                                             |
| 250.0                | 1000.1      | 6.21                                                             |
| 220.0                | 1030.1      | 6.17                                                             |
| 180.0                | 1070.1      | 6.17                                                             |
| 150.0                | 1100.1      | 6.19                                                             |
| 110.0                | 1140.1      | 6.20                                                             |
| 80.0                 | 1170.1      | 6.17                                                             |
| 40.0                 | 1210.1      | 6.23                                                             |
| 10.0                 | 1240.1      | 6.39                                                             |

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=10.1MHz<br>(dB) |
|----------------------|-------------|----------------------------------------------------------------|
|                      |             | @LO (dBm)                                                      |
|                      |             | +17                                                            |
| 10.0                 | 20.1        | 5.94                                                           |
| 70.0                 | 80.1        | 5.60                                                           |
| 130.0                | 140.1       | 5.81                                                           |
| 190.0                | 200.1       | 5.77                                                           |
| 250.0                | 260.1       | 5.64                                                           |
| 310.0                | 320.1       | 5.58                                                           |
| 370.0                | 380.1       | 5.42                                                           |
| 430.0                | 440.1       | 5.64                                                           |
| 490.0                | 500.1       | 5.61                                                           |
| 550.0                | 560.1       | 5.70                                                           |
| 610.0                | 620.1       | 5.67                                                           |
| 670.0                | 680.1       | 5.80                                                           |
| 730.0                | 740.1       | 5.97                                                           |
| 790.0                | 800.1       | 6.11                                                           |
| 850.0                | 860.1       | 6.31                                                           |
| 910.0                | 920.1       | 6.40                                                           |
| 970.0                | 980.1       | 6.58                                                           |
| 1030.0               | 1040.1      | 6.61                                                           |
| 1090.0               | 1100.1      | 6.77                                                           |
| 1150.0               | 1160.1      | 6.91                                                           |
| 1210.0               | 1220.1      | 7.13                                                           |
| 1270.0               | 1280.1      | 7.38                                                           |
| 1330.0               | 1340.1      | 7.47                                                           |
| 1390.0               | 1400.1      | 7.80                                                           |
| 1450.0               | 1460.1      | 7.83                                                           |
| 1510.0               | 1520.1      | 7.94                                                           |
| 1570.0               | 1580.1      | 8.08                                                           |
| 1630.0               | 1640.1      | 8.08                                                           |
| 1710.0               | 1720.1      | 8.44                                                           |
| 1770.0               | 1780.1      | 8.66                                                           |
| 1850.0               | 1860.1      | 8.93                                                           |
| 1910.0               | 1920.1      | 9.16                                                           |
| 1990.0               | 2000.1      | 9.55                                                           |
| 2050.0               | 2060.1      | 9.71                                                           |
| 2130.0               | 2140.1      | 9.65                                                           |
| 2190.0               | 2200.1      | 9.81                                                           |
| 2270.0               | 2280.1      | 9.86                                                           |
| 2330.0               | 2340.1      | 9.89                                                           |
| 2410.0               | 2420.1      | 10.09                                                          |
| 2470.0               | 2480.1      | 10.37                                                          |

| IF<br>(OUT)<br>(MHz) | LO<br>(MHz) | CONVERSION LOSS<br>VS. IF FREQUENCY<br>@RF(IN)=2500.1001MHz<br>(dB) |
|----------------------|-------------|---------------------------------------------------------------------|
|                      |             | @LO (dBm)                                                           |
|                      |             | +17                                                                 |
| 830.0                | 1670.1      | 10.13                                                               |
| 810.0                | 1690.1      | 10.09                                                               |
| 790.0                | 1710.1      | 9.95                                                                |
| 770.0                | 1730.1      | 9.82                                                                |
| 750.0                | 1750.1      | 9.65                                                                |
| 730.0                | 1770.1      | 9.50                                                                |
| 710.0                | 1790.1      | 9.44                                                                |
| 690.0                | 1810.1      | 9.34                                                                |
| 670.0                | 1830.1      | 9.22                                                                |
| 650.0                | 1850.1      | 9.10                                                                |
| 630.0                | 1870.1      | 8.99                                                                |
| 610.0                | 1890.1      | 8.91                                                                |
| 590.0                | 1910.1      | 8.88                                                                |
| 570.0                | 1930.1      | 8.85                                                                |
| 550.0                | 1950.1      | 8.80                                                                |
| 530.0                | 1970.1      | 8.79                                                                |
| 510.0                | 1990.1      | 8.75                                                                |
| 490.0                | 2010.1      | 8.72                                                                |
| 470.0                | 2030.1      | 8.68                                                                |
| 450.0                | 2050.1      | 8.69                                                                |
| 430.0                | 2070.1      | 8.66                                                                |
| 410.0                | 2090.1      | 8.63                                                                |
| 390.0                | 2110.1      | 8.57                                                                |
| 370.0                | 2130.1      | 8.49                                                                |
| 350.0                | 2150.1      | 8.43                                                                |
| 330.0                | 2170.1      | 8.38                                                                |
| 310.0                | 2190.1      | 8.39                                                                |
| 290.0                | 2210.1      | 8.37                                                                |
| 270.0                | 2230.1      | 8.34                                                                |
| 250.0                | 2250.1      | 8.29                                                                |
| 230.0                | 2270.1      | 8.29                                                                |
| 210.0                | 2290.1      | 8.28                                                                |
| 190.0                | 2310.1      | 8.25                                                                |
| 170.0                | 2330.1      | 8.24                                                                |
| 150.0                | 2350.1      | 8.23                                                                |
| 130.0                | 2370.1      | 8.26                                                                |
| 90.0                 | 2410.1      | 8.24                                                                |
| 70.0                 | 2430.1      | 8.24                                                                |
| 30.0                 | 2470.1      | 8.34                                                                |
| 10.0                 | 2490.1      | 8.57                                                                |

## Typical Performance Data

| LO<br>(MHz) | LO-RF ISOLATION<br>(dB) |       |       | LO-IF ISOLATION<br>(dB) |       |       |
|-------------|-------------------------|-------|-------|-------------------------|-------|-------|
|             | @LO (dBm)               |       |       | @LO (dBm)               |       |       |
|             | +14                     | +17   | +20   | +14                     | +17   | +20   |
| 40.1        | 38.72                   | 41.17 | 43.00 | 45.40                   | 48.48 | 51.25 |
| 120.1       | 39.53                   | 42.59 | 44.42 | 45.83                   | 48.46 | 50.50 |
| 200.1       | 40.08                   | 43.18 | 44.19 | 46.04                   | 48.14 | 49.82 |
| 280.1       | 40.35                   | 43.35 | 43.17 | 48.09                   | 49.23 | 48.84 |
| 360.1       | 40.91                   | 44.16 | 43.52 | 52.35                   | 50.29 | 48.30 |
| 440.1       | 41.33                   | 45.69 | 44.72 | 55.62                   | 50.09 | 47.47 |
| 520.1       | 41.08                   | 47.28 | 45.16 | 54.07                   | 50.80 | 45.03 |
| 600.1       | 40.90                   | 49.79 | 49.14 | 51.96                   | 49.67 | 43.08 |
| 680.1       | 40.13                   | 51.48 | 50.72 | 48.94                   | 46.98 | 39.93 |
| 760.1       | 39.59                   | 49.54 | 50.52 | 46.61                   | 41.11 | 36.41 |
| 920.1       | 39.07                   | 44.85 | 43.89 | 50.90                   | 39.39 | 33.69 |
| 1000.1      | 37.93                   | 43.40 | 44.74 | 45.95                   | 45.24 | 35.36 |
| 1080.1      | 37.15                   | 42.04 | 44.50 | 41.18                   | 47.86 | 36.39 |
| 1160.1      | 36.93                   | 41.19 | 42.26 | 39.90                   | 45.70 | 36.05 |
| 1240.1      | 35.92                   | 39.69 | 40.29 | 41.14                   | 40.93 | 34.62 |
| 1320.1      | 35.39                   | 39.46 | 40.05 | 43.94                   | 37.05 | 32.34 |
| 1400.1      | 35.19                   | 40.04 | 42.00 | 43.77                   | 34.59 | 31.65 |
| 1480.1      | 34.36                   | 39.83 | 45.34 | 42.62                   | 34.59 | 32.16 |
| 1560.1      | 32.73                   | 37.76 | 43.44 | 41.71                   | 35.20 | 32.75 |
| 1640.1      | 30.85                   | 34.75 | 39.00 | 39.73                   | 34.97 | 32.87 |
| 1720.1      | 29.44                   | 32.74 | 35.77 | 38.85                   | 34.94 | 32.87 |
| 1800.1      | 28.51                   | 31.66 | 34.64 | 37.52                   | 34.52 | 32.67 |
| 1880.1      | 28.13                   | 31.12 | 34.21 | 35.84                   | 33.34 | 31.75 |
| 1960.1      | 27.89                   | 30.76 | 33.31 | 35.07                   | 32.96 | 31.28 |
| 2040.1      | 27.24                   | 29.90 | 31.86 | 34.17                   | 32.56 | 30.77 |
| 2120.1      | 26.37                   | 28.29 | 30.08 | 32.71                   | 31.11 | 29.83 |
| 2200.1      | 25.86                   | 27.36 | 28.95 | 31.36                   | 30.06 | 29.15 |
| 2280.1      | 25.78                   | 27.11 | 28.43 | 30.59                   | 29.33 | 28.36 |
| 2340.1      | 25.57                   | 26.97 | 28.12 | 30.27                   | 29.32 | 28.25 |
| 2420.1      | 25.56                   | 26.84 | 28.01 | 30.39                   | 29.65 | 28.63 |
| 2480.1      | 25.96                   | 27.19 | 28.49 | 30.52                   | 30.23 | 29.16 |
| 2560.1      | 24.01                   | 25.97 | 28.16 | 29.58                   | 30.51 | 29.78 |
| 2620.1      | 22.66                   | 24.54 | 27.05 | 29.42                   | 30.93 | 30.48 |
| 2700.1      | 22.07                   | 23.88 | 26.41 | 30.05                   | 32.21 | 31.69 |
| 2760.1      | 22.04                   | 23.89 | 26.52 | 30.83                   | 33.48 | 32.49 |
| 2840.1      | 21.97                   | 24.04 | 26.80 | 31.28                   | 34.79 | 33.52 |
| 2900.1      | 21.52                   | 23.49 | 26.35 | 30.94                   | 35.48 | 34.91 |
| 2980.1      | 21.33                   | 23.44 | 26.27 | 30.70                   | 35.80 | 36.92 |
| 3040.1      | 21.60                   | 23.83 | 26.63 | 30.82                   | 36.10 | 37.92 |

| RF<br>(IN)<br>(MHz) | LO<br>(MHz) | RF-IF ISOLATION<br>(dB) |       |       |
|---------------------|-------------|-------------------------|-------|-------|
|                     |             | @LO (dBm)               |       |       |
|                     |             | +14                     | +17   | +20   |
| 10.1                | 40.1        | 37.84                   | 38.14 | 38.58 |
| 90.1                | 120.1       | 39.16                   | 38.95 | 38.58 |
| 170.1               | 200.1       | 40.25                   | 40.13 | 39.87 |
| 250.1               | 280.1       | 41.37                   | 41.31 | 43.25 |
| 330.1               | 360.1       | 43.42                   | 46.05 | 47.51 |
| 410.1               | 440.1       | 47.01                   | 50.53 | 49.75 |
| 490.1               | 520.1       | 45.24                   | 49.85 | 53.75 |
| 570.1               | 600.1       | 41.03                   | 43.78 | 45.41 |
| 650.1               | 680.1       | 38.65                   | 40.63 | 40.92 |
| 730.1               | 760.1       | 37.28                   | 39.01 | 38.45 |
| 890.1               | 920.1       | 38.95                   | 39.79 | 39.23 |
| 970.1               | 1000.1      | 37.82                   | 39.45 | 38.35 |
| 1050.1              | 1080.1      | 34.16                   | 35.95 | 36.35 |
| 1130.1              | 1160.1      | 32.78                   | 34.21 | 34.90 |
| 1210.1              | 1240.1      | 32.76                   | 33.32 | 34.08 |
| 1290.1              | 1320.1      | 32.36                   | 31.78 | 32.71 |
| 1370.1              | 1400.1      | 30.48                   | 30.40 | 31.32 |
| 1450.1              | 1480.1      | 29.26                   | 29.21 | 30.09 |
| 1530.1              | 1560.1      | 28.71                   | 28.70 | 29.89 |
| 1610.1              | 1640.1      | 29.33                   | 29.21 | 30.52 |
| 1690.1              | 1720.1      | 30.72                   | 30.87 | 32.12 |
| 1770.1              | 1800.1      | 33.23                   | 32.93 | 33.24 |
| 1850.1              | 1880.1      | 35.65                   | 34.92 | 34.78 |
| 1930.1              | 1960.1      | 37.08                   | 37.15 | 37.13 |
| 2010.1              | 2040.1      | 37.60                   | 37.60 | 38.39 |
| 2090.1              | 2120.1      | 38.36                   | 38.08 | 38.09 |
| 2170.1              | 2200.1      | 39.66                   | 39.24 | 39.32 |
| 2250.1              | 2280.1      | 40.32                   | 41.47 | 42.68 |
| 2310.1              | 2340.1      | 39.93                   | 42.03 | 43.79 |
| 2390.1              | 2420.1      | 40.06                   | 40.88 | 42.55 |
| 2450.1              | 2480.1      | 41.19                   | 40.15 | 42.32 |
| 2530.1              | 2560.1      | 43.00                   | 41.56 | 42.00 |
| 2590.1              | 2620.1      | 47.48                   | 45.10 | 42.44 |
| 2670.1              | 2700.1      | 45.32                   | 44.96 | 41.16 |
| 2730.1              | 2760.1      | 42.58                   | 42.89 | 39.90 |
| 2810.1              | 2840.1      | 38.31                   | 38.73 | 39.57 |
| 2870.1              | 2900.1      | 36.20                   | 36.53 | 37.62 |
| 2950.1              | 2980.1      | 34.61                   | 34.72 | 35.17 |
| 3010.1              | 3040.1      | 33.77                   | 34.09 | 34.98 |

# Frequency Mixer

# SRA-2500SH

## 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=2500MHz<br>(:1) |      |      |
|---------------------|-------------|-----------------|------|------|-------------|-----------------|------|------|----------------------|--------------------------------|------|------|
|                     |             | @LO (dBm)       |      |      |             | @LO (dBm)       |      |      |                      | @LO (dBm)                      |      |      |
|                     |             | +14             | +17  | +20  |             | +14             | +17  | +20  |                      | +14                            | +17  | +20  |
| 10.1                | 40.1        | 1.82            | 1.65 | 1.42 | 40.1        | 1.41            | 1.38 | 2.59 | 10.0                 | 1.52                           | 1.13 | 1.09 |
| 90.1                | 120.1       | 1.76            | 1.59 | 1.38 | 120.1       | 1.38            | 1.21 | 1.79 | 50.0                 | 1.57                           | 1.19 | 1.07 |
| 170.1               | 200.1       | 1.79            | 1.61 | 1.39 | 200.1       | 1.41            | 1.15 | 1.65 | 90.0                 | 1.55                           | 1.18 | 1.13 |
| 250.1               | 280.1       | 1.80            | 1.63 | 1.42 | 280.1       | 1.43            | 1.10 | 1.58 | 130.0                | 1.62                           | 1.26 | 1.16 |
| 330.1               | 360.1       | 1.85            | 1.69 | 1.48 | 360.1       | 1.52            | 1.04 | 1.50 | 170.0                | 1.67                           | 1.31 | 1.20 |
| 410.1               | 440.1       | 1.97            | 1.79 | 1.59 | 440.1       | 1.63            | 1.01 | 1.44 | 210.0                | 1.74                           | 1.40 | 1.29 |
| 490.1               | 520.1       | 2.19            | 1.97 | 1.77 | 520.1       | 1.77            | 1.07 | 1.37 | 250.0                | 1.83                           | 1.48 | 1.34 |
| 570.1               | 600.1       | 2.42            | 2.15 | 1.93 | 600.1       | 1.86            | 1.13 | 1.32 | 290.0                | 1.88                           | 1.54 | 1.40 |
| 650.1               | 680.1       | 2.50            | 2.23 | 2.02 | 680.1       | 1.96            | 1.20 | 1.28 | 330.0                | 2.01                           | 1.66 | 1.50 |
| 730.1               | 760.1       | 2.52            | 2.30 | 2.11 | 760.1       | 2.03            | 1.26 | 1.27 | 370.0                | 2.06                           | 1.71 | 1.54 |
| 890.1               | 920.1       | 2.19            | 2.07 | 1.93 | 920.1       | 2.10            | 1.36 | 1.35 | 450.0                | 2.27                           | 1.89 | 1.69 |
| 970.1               | 1000.1      | 1.96            | 1.85 | 1.75 | 1000.1      | 2.09            | 1.40 | 1.41 | 490.0                | 2.39                           | 2.02 | 1.80 |
| 1050.1              | 1080.1      | 1.76            | 1.63 | 1.55 | 1080.1      | 2.06            | 1.44 | 1.49 | 530.0                | 2.50                           | 2.11 | 1.87 |
| 1130.1              | 1160.1      | 1.60            | 1.44 | 1.35 | 1160.1      | 2.02            | 1.46 | 1.55 | 570.0                | 2.55                           | 2.17 | 1.94 |
| 1210.1              | 1240.1      | 1.50            | 1.30 | 1.20 | 1240.1      | 1.97            | 1.47 | 1.61 | 610.0                | 2.64                           | 2.25 | 2.00 |
| 1290.1              | 1320.1      | 1.45            | 1.27 | 1.15 | 1320.1      | 1.89            | 1.47 | 1.67 | 650.0                | 2.66                           | 2.27 | 2.03 |
| 1370.1              | 1400.1      | 1.53            | 1.38 | 1.28 | 1400.1      | 1.81            | 1.48 | 1.71 | 690.0                | 2.73                           | 2.34 | 2.10 |
| 1450.1              | 1480.1      | 1.74            | 1.62 | 1.52 | 1480.1      | 1.74            | 1.49 | 1.74 | 730.0                | 2.73                           | 2.35 | 2.12 |
| 1530.1              | 1560.1      | 2.04            | 1.89 | 1.76 | 1560.1      | 1.71            | 1.50 | 1.76 | 770.0                | 2.75                           | 2.38 | 2.17 |
| 1610.1              | 1640.1      | 2.26            | 2.07 | 1.92 | 1640.1      | 1.70            | 1.51 | 1.77 | 810.0                | 2.72                           | 2.37 | 2.17 |
| 1690.1              | 1720.1      | 2.48            | 2.25 | 2.11 | 1720.1      | 1.69            | 1.50 | 1.76 | 850.0                | 2.65                           | 2.34 | 2.18 |
| 1770.1              | 1800.1      | 2.55            | 2.31 | 2.17 | 1800.1      | 1.65            | 1.49 | 1.76 | 890.0                | 2.61                           | 2.33 | 2.20 |
| 1850.1              | 1880.1      | 2.61            | 2.36 | 2.24 | 1880.1      | 1.62            | 1.50 | 1.77 | 930.0                | 2.47                           | 2.22 | 2.15 |
| 1930.1              | 1960.1      | 2.73            | 2.49 | 2.37 | 1960.1      | 1.62            | 1.52 | 1.78 | 970.0                | 2.43                           | 2.23 | 2.20 |
| 2010.1              | 2040.1      | 2.84            | 2.63 | 2.51 | 2040.1      | 1.61            | 1.54 | 1.79 | 1010.0               | 2.30                           | 2.16 | 2.20 |
| 2090.1              | 2120.1      | 2.84            | 2.65 | 2.54 | 2120.1      | 1.61            | 1.57 | 1.82 | 1050.0               | 2.20                           | 2.13 | 2.24 |
| 2170.1              | 2200.1      | 2.77            | 2.59 | 2.49 | 2200.1      | 1.62            | 1.64 | 1.91 | 1090.0               | 2.10                           | 2.10 | 2.29 |
| 2250.1              | 2280.1      | 2.70            | 2.53 | 2.42 | 2280.1      | 1.64            | 1.74 | 2.03 | 1130.0               | 1.96                           | 2.06 | 2.31 |
| 2310.1              | 2340.1      | 2.66            | 2.49 | 2.39 | 2340.1      | 1.65            | 1.82 | 2.13 | 1170.0               | 1.87                           | 2.03 | 2.34 |
| 2390.1              | 2420.1      | 2.53            | 2.31 | 2.17 | 2420.1      | 1.69            | 1.93 | 2.27 | 1210.0               | 1.79                           | 2.06 | 2.44 |
| 2450.1              | 2480.1      | 2.49            | 2.21 | 2.05 | 2480.1      | 1.76            | 2.04 | 2.39 | 1250.0               | 1.68                           | 2.09 | 2.42 |
| 2530.1              | 2560.1      | 2.50            | 2.20 | 2.01 | 2560.1      | 1.91            | 2.23 | 2.60 | 1290.0               | 1.70                           | 2.12 | 2.59 |
| 2590.1              | 2620.1      | 2.49            | 2.17 | 1.99 | 2620.1      | 2.03            | 2.38 | 2.75 | 1330.0               | 1.72                           | 2.22 | 2.72 |
| 2670.1              | 2700.1      | 2.50            | 2.16 | 1.98 | 2700.1      | 2.18            | 2.55 | 2.93 | 1370.0               | 1.76                           | 2.30 | 2.84 |
| 2730.1              | 2760.1      | 2.44            | 2.14 | 1.98 | 2760.1      | 2.33            | 2.74 | 3.17 | 1430.0               | 1.95                           | 2.52 | 3.08 |
| 2810.1              | 2840.1      | 2.32            | 2.10 | 2.00 | 2840.1      | 2.58            | 3.02 | 3.48 | 1470.0               | 2.09                           | 2.63 | 3.19 |
| 2870.1              | 2900.1      | 2.31            | 2.14 | 2.09 | 2900.1      | 2.69            | 3.11 | 3.51 | 1530.0               | 2.40                           | 2.92 | 3.44 |
| 2950.1              | 2980.1      | 2.21            | 2.17 | 2.22 | 2980.1      | 2.92            | 3.34 | 3.75 | 1570.0               | 2.62                           | 3.11 | 3.58 |
| 3010.1              | 3040.1      | 2.22            | 2.30 | 2.42 | 3040.1      | 3.21            | 3.69 | 4.19 | 1630.0               | 3.01                           | 3.43 | 3.84 |

## Harmonics Tables

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |     |     |     |     |     |     |     |     |     |     |
|----|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0  | -      | -      | 15  | 21  | 18  | 29  | 21  | 31  | 33  | 35  | 36  | 56  |
| 1  | -      | 30     | +0  | 44  | 17  | 48  | 35  | 41  | 50  | 39  | 51  | 59  |
| 2  | 66     | 59     | 47  | 55  | 48  | 60  | 53  | 81  | 51  | 59  | 58  | 69  |
| 3  | >90    | 72     | 74  | 61  | 61  | 61  | 63  | 71  | 72  | 70  | 78  | 73  |
| 4  | >90    | >83    | >83 | 81  | >83 | 82  | >83 | 82  | >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 | >83 | >83 | >83 | >83 |
|    | RF CAL | 0      | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |

Test conditions:

RF IN: 1250 MHz; -1.00 dBm.  
LO IN: 1280 MHz; +17.00 dBm  
IF OUT: 30 MHz; -7.31 dBm

RF HARMONICS ORDER

|    | (-dBm) | (-dBc) |     |     |     |     |     |    |     |     |    |    |
|----|--------|--------|-----|-----|-----|-----|-----|----|-----|-----|----|----|
| 0  | -      | -      | 22  | 31  | 30  | 42  | 38  | 46 | 48  | 50  | 56 | 68 |
| 1  | -      | 29     | +0  | 51  | 18  | 53  | 39  | 47 | 58  | 47  | 50 | 69 |
| 2  | 46     | 49     | 36  | 48  | 37  | 53  | 45  | 61 | 44  | 54  | 55 | 56 |
| 3  | 72     | 69     | 55  | 57  | 40  | 58  | 44  | 69 | 54  | 58  | 67 | 54 |
| 4  | >90    | 72     | 68  | 73  | 56  | 60  | 53  | 60 | 60  | 68  | 57 | 71 |
| 5  | >90    | 74     | 76  | 74  | 64  | 67  | 70  | 67 | 65  | 75  | 72 | 71 |
| 6  | >90    | 80     | 86  | 84  | 89  | 78  | 67  | 80 | 71  | >93 | 89 | 80 |
| 7  | >90    | 92     | >93 | 84  | 90  | 79  | 80  | 73 | 74  | 76  | 76 | 81 |
| 8  | >90    | 83     | >93 | 86  | 89  | 85  | 88  | 80 | 80  | 76  | 75 | 80 |
| 9  | >90    | >93    | >93 | >93 | >93 | 92  | >93 | 87 | >93 | 82  | 92 | 84 |
| 10 | >90    | >93    | >93 | >93 | >93 | >93 | >93 | 92 | 92  | 85  | 84 | 82 |
|    | RF CAL | 0      | 1   | 2   | 3   | 4   | 5   | 6  | 7   | 8   | 9  | 10 |

## LO HARMONICS ORDER

Test conditions:

RF IN: 1250 MHz; 9.00 dBm.  
LO IN: 1280 MHz; +17.00 dBm  
IF OUT: 30 MHz; 2.62 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.