

## PLL Synthesizer

(주)알티엑스테크놀로지

### Feature

Excellent Phase Noise & Spurious  
 Frequency range from 20MHz to 6GHz  
 Low Cost & Custom Design  
 ALL Harmonics are below  $-20\text{dBc}$

### Application

Cellular, PCS, UMTS  
 UP/Down Converter  
 Clock & Data Retiming Circuit  
 Point to Multipoint



### Specification

| Function                          | RF/Local Frequency | IF/Local Frequency | Structure            | Package Type                    |
|-----------------------------------|--------------------|--------------------|----------------------|---------------------------------|
| PLL Modules                       | 20 to 6000MHz      | -                  | VCO+PLL IC           | PA3, PA7, PS3, PD1, PM1         |
| PLL Modules (Internal Ref.)       | 20 to 6000MHz      | -                  | VCO+PLL+TCXO         | PA9, PD6                        |
| Dual PLL Modules                  | 20 to 6000MHz      | 20 to 1000MHz      | 2VCO+Dual PLL IC     | PD3                             |
| Fixed PLL Modules                 | 20 to 6000MHz      | -                  | VCO+PLL IC+ROM       | PA6, PD4, PD7, (Optional EPROM) |
| Fixed PLL Modules (Internal Ref.) | 20 to 6000MHz      | -                  | VCO+PLL IC +ROM+TCXO | PA8, PD5                        |

## *PLL Synthesizer Module*

### Specification

| Part Number | Frequency Range (MHz) | Supply Voltage (Vdc) | Output Power (dBm.) (typ) | Current Consump. (mA,max) | 2 <sup>nd</sup> Harmonic (dBc,typ) | Step Size (KHz) | Spurious Level (dBc) | Phase Noise @25kHz (dBc/Hz) (max) | Dim. (WxLxH) (mm) |
|-------------|-----------------------|----------------------|---------------------------|---------------------------|------------------------------------|-----------------|----------------------|-----------------------------------|-------------------|
| RTPA2-26B   | 26                    | 5.0                  | 1.0                       | 20                        | -15                                | 50              | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-65    | 65.04                 | 5.0                  | 10.0                      | 30                        | -20                                | 20              | -70                  | -116@25KHz                        | 19.5x19.5x6.5     |
| RTPS3-82B   | 82±5                  | 5.0                  | 0.0                       | 11                        | -                                  | 25              | -70                  | -113@10KHz                        | 15.5x15.5x4.0     |
| RTPS3-85B   | 80~90                 | 5.0                  | 5.0                       | 30                        | -20                                | 20              | -65                  | -105@10KHz                        | 15.5x15.5x4.0     |
| RTPS3-90B   | 80~100                | 5.0                  | 5.0                       | 30                        | -20                                | 20              | -65                  | -105@10KHz                        | 15.5x15.5x4.0     |
| RTPM1-95B   | 95±1                  | 5.0                  | 0.0                       | 16                        | -                                  | 50              | -70                  | -116@10KHz                        | 14.0x14.5x 4.0    |
| RTPS3-100B  | 99~101                | 5.0                  | 5.0                       | 30                        | -20                                | 20              | -65                  | -105@10KHz                        | 15.5x15.5x4.0     |
| RTPM1-102B  | 102±2                 | 5.0                  | 0.0                       | 14                        | -                                  | 10              | -70                  | -115@10KHz                        | 14.0x14.5x 4.0    |
| RTPM1-137B  | 137±1                 | 5.0                  | 0.0                       | 19                        | -                                  | 10              | -70                  | -116@10KHz                        | 14.0x14.5x 4.0    |
| RTPS3-138B  | 138±2                 | 5.0                  | 4.0                       | 17                        | -                                  | 50              | -70                  | -115@10KHz                        | 19.5x9.5x6.5      |
| RTPM1-147B  | 147±1                 | 5.0                  | 0.0                       | 15                        | -                                  | 10              | -70                  | -115@10KHz                        | 14.0x14.5x 4.0    |
| RTPA2-150B  | 140 ~ 160             | 5.0                  | 3.0                       | 20                        | -26                                | 25              | -70                  | -112@25KHz                        | 19.5x19.5x6.5     |
| RTPS1-310B  | 310                   | 5.0                  | 0.0                       | 18                        | -20                                | 50              | -70                  | -113@10KHz                        | 15.5x15.5x4.0     |
| RTPA2-338B  | 328 ~ 348             | 5.0                  | 6.5                       | 30                        | -20                                | 10              | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-388B  | 387.82                | 5.0                  | 5.0                       | 30                        | -20                                | 10              | -65                  | -107@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-403   | 403.18                | 5.0                  | 5.0                       | 30                        | -20                                | 10              | -65                  | -107@10KHz                        | 19.5x19.5x6.5     |
| RTPA2-420   | 415 ~ 425             | 5.0                  | 10.0                      | 30                        | -20                                | 12.5            | -70                  | -112@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-452B  | 422 ~ 482             | 5.0                  | 5.0                       | 24                        | -24                                | 50              | -70                  | -101@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-510   | 505 ~ 515             | 5.0                  | 9.0                       | 30                        | -20                                | 12.5            | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-539   | 539.14                | 5.0                  | 7.0                       | 30                        | -20                                | 20              | -70                  | -112@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-652B  | 634 ~ 651             | 5.0                  | 5.0                       | 30                        | -20                                | 25              | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-655B  | 645 ~ 665             | 5.0                  | 4.5                       | 22                        | -35                                | 50              | -70                  | -108@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-698B  | 679 ~ 714             | 5.0                  | 5.0                       | 20                        | -20                                | 25              | -70                  | -113@10KHz                        | 19.5x19.5x6.5     |
| RWPH1-775   | 700 ~ 850             | 15~18                | 8.0                       | 25                        | -22                                | 200             | -70                  | -87@10KHz                         | 79x80x20          |
| RTPA2-724B  | 710 ~ 738             | 5.0                  | 5.0                       | 25                        | -20                                | 30              | -65                  | -107@10KHz                        | 19.5x19.5x6.5     |
| RTPA2-752   | 710 ~ 740             | 5.0                  | 7.0                       | 30                        | -20                                | 12.5            | -70                  | -112@25KHz                        | 19.5x19.5x6.5     |
| RTPM1-746B  | 727 ~ 765             | 5.0                  | 0.0                       | 22                        | -20                                | 12.5            | -70                  | -108@10KHz                        | 14.0x14.5x4.0     |
| RTPA2-758   | 740 ~ 775             | 5.0                  | 7.0                       | 30                        | -20                                | 100             | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-767JR | 754 ~ 779             | 5.0                  | 6.0                       | 20                        | -20                                | 10              | -70                  | -108@10KHz                        | 19.5x19.5x6.5     |
| RTPM1-813B  | 766 ~ 860             | 5.0                  | 0.0                       | 22                        | -20                                | 12.5            | -70                  | -102@10KHz                        | 14.0x14.5x4.0     |
| RTPA7-833R  | 820 ~ 845             | 5.0                  | 8.0                       | 30                        | -20                                | 100             | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-833   | 820 ~ 845             | 5.0                  | 4.0                       | 30                        | -20                                | 50              | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-878B  | 865 ~ 890             | 5.0                  | 4.0                       | 30                        | -20                                | 50              | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-894C  | 868 ~ 920             | 5.0                  | 5.0                       | 30                        | -20                                | 25              | -70                  | -107@10KHz                        | 19.5x19.5x6.5     |
| RTPA2-882E  | 869 ~ 894             | 5.0                  | 5.0                       | 20                        | -20                                | 30              | -65                  | -107@10KHz                        | 19.5x19.5x6.5     |
| RTPM1-880B  | 870~890               | 5.0                  | 0.0                       | 25                        | -20                                | 12.5            | -70                  | -109@10KHz                        | 14.0x14.5x4.0     |
| RTPM1-906B  | 887~925               | 5.0                  | 0.0                       | 24.                       | -20                                | 12.5            | -70                  | -108@10KHz                        | 14.0x14.5x4.0     |
| RTPA2-910B  | 900 ~ 920             | 5.0                  | 5.5                       | 19                        | -20                                | 50              | -70                  | -108@10KHz                        | 19.5x19.5x6.5     |
| RTPA2-944B  | 932~956               | 5.0                  | 5.0                       | 20                        | -20                                | 25              | -65                  | -101@25KHz                        | 19.5x19.5x6.5     |
| RTPA2-952JR | 939 ~ 964             | 5.0                  | 5.5                       | 20                        | -20                                | 10              | -70                  | -108@10KHz                        | 19.5x19.5x6.5     |
| RTPA2-965B  | 952 ~ 977             | 5.0                  | 5.0                       | 20                        | -20                                | 30              | -65                  | -107@10KHz                        | 19.5x19.5x6.5     |

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### Specification

| Part Number  | Frequency Range (MHz) | Supply Voltage (Vdc) | Output Power (dBm.) (typ) | Current Consump. (mA,max) | 2'nd Harmonic (dBc,typ) | Step Size (KHz) | Spurious Level (dBc) | Phase Noise @25kHz (dBc/Hz) (max) | DIM (WxLxH) (mm) |
|--------------|-----------------------|----------------------|---------------------------|---------------------------|-------------------------|-----------------|----------------------|-----------------------------------|------------------|
| RTPM1-976B   | 957 ~ 995             | 5.0                  | 0                         | 24                        | -20                     | 12.5            | -70                  | -108@10KHz                        | 14.0x14.5x4.0    |
| RTPA3-974    | 958.5~988.5           | 5.0                  | 2.0                       | 19                        | -20                     | 25              | -70                  | -108@10KHz                        | 19.5x19.5x6.5    |
| RTPA7-995    | 960~1030              | 5.0                  | 5.0                       | 20                        | -20                     | 25              | -65                  | -101@10KHz                        | 19.5x19.5x6.5    |
| RTPS1-984B   | 974 ~ 994             | 5.0                  | 2.0                       | 23                        | -20                     | 12.5            | -70                  | -107@10KHz                        | 15.5x15.5x4.0    |
| RTPA7-1018   | 1005~1030             | 5.0                  | 6.0                       | 50                        | -20                     | 100             | -70                  | -105@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1018E  | 1004.5~1030.5         | 5.0                  | 3.0                       | 20                        | -20                     | 10              | -70                  | -107@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1018   | 1005~1030             | 5.0                  | 3.0                       | 30                        | -20                     | 100             | -70                  | -110@25KHz                        | 19.5x19.5x6.5    |
| RTPA2-1018B  | 1005~1030             | 5.0                  | 4.0                       | 14                        | -20                     | 100             | -70                  | -111@25KHz                        | 19.5x19.5x6.5    |
| RTPA2-1039   | 1025~1039             | 5.0                  | 2.0                       | 50                        | -20                     | 30              | -70                  | -106@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1039B  | 1025~1053             | 5.0                  | 5.0                       | 20                        | -20                     | 30              | -70                  | -105@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1049B  | 1048.5                | 5.0                  | 4.0                       | 30                        | -20                     | 100             | -70                  | -110@25KHz                        | 19.5x19.5x6.5    |
| RTPA3-1049   | 1049~1109             | 5.0                  | 2.0                       | 22                        | -20                     | 25              | -70                  | -104@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1083   | 1065~1100             | 5.0                  | 7.0                       | 30                        | -20                     | 100             | -70                  | -110@25KHz                        | 19.5x19.5x6.5    |
| RTPA7-1083   | 1065~1100             | 5.0                  | 7.0                       | 20                        | -20                     | 100             | -65                  | -103@25KHz                        | 19.5x19.5x6.5    |
| RTPA3-1344   | 1329~1359             | 5.0                  | 2.0                       | 24                        | -20                     | 10              | -70                  | -105@10KHz                        | 19.5x19.5x6.5    |
| RTPA7-1420   | 1340~1500             | 5.0                  | 0.0                       | 20                        | -20                     | 100             | -65                  | -96@10KHz                         | 19.5x19.5x6.5    |
| RTPA2-1502   | 1464~1539             | 5.0                  | 3.0                       | 30                        | -20                     | 100             | -70                  | -98@10KHz                         | 19.5x19.5x6.5    |
| RTPA7-1600   | 1500~1700             | 5.0                  | 0.0                       | 20                        | -20                     | 100             | -65                  | -96@10KHz                         | 19.5x19.5x6.5    |
| RTPA2-1597   | 1559~1634             | 5.0                  | 3.0                       | 30                        | -20                     | 100             | -70                  | -98@10KHz                         | 19.5x19.5x6.5    |
| RTPA7-1608   | 1570~1645             | 5.0                  | 3.0                       | 20                        | -20                     | 100             | -70                  | -100@25KHz                        | 19.5x19.5x6.5    |
| RTPA-1645R   | 1630~1660             | 5.0                  | 4.0                       | 24                        | -30                     | 20              | -70                  | -110@25KHz                        | 19.5x19.5x6.5    |
| RTPA2-1670   | 1640~1700             | 5.0                  | 4.0                       | 30                        | -20                     | 100             | -70                  | -105@25KHz                        | 19.5x19.5x6.5    |
| RTPA2-1670R  | 1640~1700             | 5.0                  | 3.0                       | 30                        | -20                     | 100             | -70                  | -105@25KHz                        | 19.5x19.5x6.5    |
| RTPA2-1685   | 1670~1700             | 5.0                  | 2.0                       | 30                        | -20                     | 50              | -70                  | -110@25KHz                        | 19.5x19.5x6.5    |
| RTPS1-1690   | 1680~1700             | 5.0                  | 1.5                       | 25                        | -20                     | 50              | -70                  | -105@10KHz                        | 15.5x15.5x4.0    |
| RTPA2-1695   | 1680~1710             | 5.0                  | 5.0                       | 25                        | -20                     | 50              | -70                  | -106@10KHz                        | 19.5x19.5x19.5   |
| RTPA2-1700   | 1690~1710             | 5.0                  | 2.0                       | 30                        | -20                     | 50              | -70                  | -110@25KHz                        | 19.5x19.5x6.5    |
| RTPA2-1705   | 1690~1720             | 5.0                  | 4.0                       | 24                        | -20                     | 50              | -70                  | -105@10KHz                        | 19.5x19.5x6.5    |
| RTPA3-1730   | 1725~1735             | 5.0                  | 3.0                       | 28                        | -20                     | 10              | -70                  | -102@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1755JR | 1725~1785             | 5.0                  | 3.0                       | 30                        | -20                     | 100             | -70                  | -105@25KHz                        | 19.5x19.5x6.5    |
| RTPS1-1760   | 1730~1790             | 5.0                  | 0.0                       | 24                        | -20                     | 200             | -70                  | -103@10KHz                        | 15.5x15.5x4.0    |
| RTPA2-1790   | 1760~1820             | 5.0                  | 1.0                       | 30                        | -20                     | 50              | -70                  | -110@25KHz                        | 19.5x19.5x6.5    |
| RTPA3-1810   | 1780~1840             | 5.0                  | 3.0                       | 25                        | -20                     | 10              | -70                  | -101@10KHz                        | 19.5x19.5x6.5    |
| RTPA3-1900   | 1870~1930             | 5.0                  | 3.0                       | 25                        | -20                     | 10              | -70                  | -100@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1905JR | 1875~1935             | 5.0                  | 2.0                       | 30                        | -20                     | 50              | -70                  | -100@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1905   | 1875~1935             | 5.0                  | 2.0                       | 30                        | -20                     | 100             | -70                  | -105@25KHz                        | 19.5x19.5x6.5    |
| RTPA7-1905R  | 1875~1905             | 5.0                  | 2.0                       | 30                        | -20                     | 100             | -70                  | -105@25KHz                        | 19.5x19.5x6.5    |
| RTPA7-2050J  | 1900~2200             | 5.0                  | 0.0                       | 30                        | -20                     | 100             | -65                  | -90@10KHz                         | 19.5x19.5x6.5    |
| RTPA2-1925   | 1915~1935             | 5.0                  | 4.0                       | 24                        | -28                     | 20              | -70                  | -104@10KHz                        | 19.5x19.5x6.5    |
| RTPA2-1973   | 1930~2015             | 5.0                  | 2.0                       | 20                        | -20                     | 50              | -65                  | -97@10KHz                         | 19.5x19.5x6.5    |
| RTPA7-1983   | 1945~2020             | 5.0                  | 3.0                       | 20                        | -20                     | 100             | -70                  | -100@25KHz                        | 19.5x19.5x6.5    |

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### Specification

| Part Number | Frequency Range (MHz) | Supply Voltage (Vdc) | Output Power (dBm.) (typ) | Current Consump. (mA,max) | 2'nd Harmonic (dBc,typ) | Step Size (KHz) | Spurious Level (dBc) | Phase Noise @25kHz (dBc/Hz) (max) | Dim. (WxLxH) (mm) |
|-------------|-----------------------|----------------------|---------------------------|---------------------------|-------------------------|-----------------|----------------------|-----------------------------------|-------------------|
| RTPA2-2043  | 2035~2050             | 5.0                  | 3.5                       | 24                        | -33                     | 100             | -70                  | -99@10KHz                         | 19.5x19.5x6.5     |
| RTPA2-2125  | 2080~2170             | 5.0                  | 2.0                       | 20                        | -20                     | 50              | -65                  | -97@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2163  | 2110~2215             | 5.0                  | 0.0                       | 20                        | -30                     | 100             | -65                  | -92@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-2165  | 2135~2195             | 5.0                  | 0.0                       | 26                        | -30                     | 10              | -70                  | -97@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2210  | 2180~2240             | 5.0                  | 0.0                       | 20                        | -30                     | 50              | -65                  | -92@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2302  | 2302.20               | 5.0                  | 3.0                       | 30                        | -20                     | -               | -65                  | -100@10KHz                        | 19.5x19.5x6.5     |
| RTPA7-2375L | 2200~2550             | 5.0                  | 0.0                       | 30                        | -20                     | 100             | -65                  | -90@10KHz                         | 19.5x19.5x6.5     |
| RTPS1-2330  | 2315~2345             | 5.0                  | 0.5                       | 24                        | -30                     | 200             | -70                  | -91@10KHz                         | 15.5x15.5x4.0     |
| RTPA2-2442  | 2400~2484             | 5.0                  | 2.5                       | 29                        | -25                     | 100             | -70                  | -99@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2442  | 2400~2483.5           | 5.0                  | 2.0                       | 20                        | -20                     | 100             | -65                  | -90@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2495  | 2460~2530             | 5.0                  | 0.0                       | 20                        | -30                     | 100             | -65                  | -90@10MHz                         | 19.5x19.5x6.5     |
| RTPA7-2350J | 2350±50               | 5.0                  | 0.0                       | 24                        | -20                     | 100             | -70                  | -99@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2440  | 2440±40               | 5.0                  | 0.0                       | 21                        | -20                     | 20              | -70                  | -94@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-2510  | 2470~2550             | 5.0                  | 0.0                       | 27                        | -30                     | 50              | -70                  | -94@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2543  | 2543±60               | 5.0                  | 0.0                       | 23                        | -20                     | 50              | -70                  | -93@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2548  | 2548±25               | 5.0                  | 0.0                       | 23                        | -20                     | 200             | -70                  | -97@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2600  | 2500~2700             | 5.0                  | 0.0                       | 20                        | -20                     | 100             | -65                  | -93@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2643J | 2643±10               | 5.0                  | 0.0                       | 25                        | -20                     | 100             | -70                  | -94@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2643  | 2643±15               | 5.0                  | 0.0                       | 24                        | -20                     | 500             | -70                  | -96@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-2740  | 2740±30               | 5.0                  | 0.0                       | 20                        | -20                     | 30              | -70                  | -95@10KHz                         | 19.5x19.5x6.5     |
| RTPA7-3225  | 3200~3250             | 5.0                  | 0.0                       | 25                        | -                       | 125             | -70                  | -93@10KHz                         | 19.5x19.5x6.5     |
| RTPA2-3360  | 3330~3390             | 5.0                  | 0.0                       | 25                        | -                       | 125             | -70                  | -95@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-4538  | 4460~4615             | 5.0                  | 5.0                       | 30                        | -                       | 500             | -65                  | -79@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-4900  | 4897.5~4902.5         | 5.0                  | 0.0                       | 25                        | -                       | 50              | -70                  | -85@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-4900  | 4900±5                | 5.0                  | 0.0                       | 45                        | -                       | 50              | -70                  | -85@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-5000  | 5000±50               | 5.0                  | 0.0                       | 40                        | -                       | 500             | -70                  | -84@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-5545  | 5545±50               | 5.0                  | 2.0                       | 40                        | -                       | 500             | -70                  | -84@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-5688  | 5688±60               | 5.0                  | 0.0                       | 40                        | -                       | 100             | -70                  | -86@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-5788  | 5788±60               | 5.0                  | 0.0                       | 40                        | -                       | 100             | -70                  | -86@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-5800  | 5800±50               | 5.0                  | 2.0                       | 35                        | -                       | 1000            | -70                  | -84@10KHz                         | 19.5x19.5x6.5     |
| RTPA3-5800  | 5750~5850             | 5.0                  | 2.0                       | 30                        | -25                     | 500             | -65                  | -84@10kHz                         | 19.5x19.5x6.5     |
| RTPA3-5840  | 5820~5860             | 5.0                  | 2.0                       | 46                        | -20                     | 1000            | -40                  | -77@10KHz                         | 19.5x19.5x6.5     |
| RPJ1-6900   | 6700~7100             | 15~18                | 10.0                      | -                         | -20                     | 0.8             | -60                  | -92@10KHz                         | 132x90x22         |
| RPJ1-9375   | 9000~9750             | 18.0                 | 10.0                      | 300                       | -20                     | 1.2             | -5.5                 | -95@10KHz                         | 165x83x22         |
| RPJ1-10125  | 9750~10500            | 18.0                 | 10.0                      | 300                       | -20                     | 1.2             | -5.5                 | -95@10KHz                         | 165x83x22         |

## Single Fixed PLL Module

### Specification

| Part Number  | Frequency Range (MHz) | Supply Voltage (Vdc) | Output Power (dBm.) (typ) | Current Consump. (mA,max) | 2'nd Harmonic (dBc,typ) | Spurious Level (dBc) | Phase Noise @25KHz (dBc/Hz) (max) | Dim. (WxLxH) (mm) |
|--------------|-----------------------|----------------------|---------------------------|---------------------------|-------------------------|----------------------|-----------------------------------|-------------------|
| RTPA4-21B    | 21.4                  | 5.0                  | 5.0                       | 18                        | -20                     | -70                  | -117@25KHz                        | 19.5x19.5x6.5     |
| RTPA6-30B    | 30                    | 5.0                  | 8.0                       | 12                        | -                       | -70                  | -116@25KHz                        | 19.0x19.0x5.7     |
| RTPA6-50D    | 50                    | 5.0                  | 6.0                       | 18                        | -                       | -70                  | -115@25KHz                        | 19.0x19.0x5.7     |
| RTPA6-66D    | 65.536                | 5.0                  | 8.0                       | 17                        | -                       | -70                  | -116@25KHz                        | 19.0x19.0x5.7     |
| RTPA6-67B    | 67.1                  | 5.0                  | 0.0                       | 11                        | -                       | -70                  | -115@25KHz                        | 19.0x19.0x5.7     |
| RTPA6-80D    | 80                    | 5.0                  | 5.0                       | 50                        | -20                     | -65                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-100B   | 100                   | 5.0                  | 0.0                       | 19                        | -20                     | -70                  | -115@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-105B   | 104.64                | 5.0                  | 6.0                       | 17                        | -20                     | -70                  | -114@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-160C   | 160                   | 5.0                  | 5.0                       | 17                        | -20                     | -70                  | -114@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-382B   | 381.5                 | 5.0                  | 1.0                       | 19                        | -20                     | -70                  | -110@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-770BR  | 770.2                 | 5.0                  | 7.0                       | 18                        | -20                     | -70                  | -111@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-813B   | 812.78                | 5.0                  | 8.0                       | 20                        | -20                     | -70                  | -108@25KHz                        | 19.5x19.5x6.5     |
| RTPA8-930    | 930.00                | 5.0                  | 10.0                      | 50                        | -20                     | -65                  | -100@25KHz                        | 19.5x19.5x6.5     |
| RTPA8-930-C  | 930.00                | 24.0                 | 10                        | 150                       | -20                     | -65                  | -102@10KHz                        | 59.0x70.0x20.0    |
| RTPA4-955BR  | 955.2                 | 5.0                  | 7.0                       | 17                        | -20                     | -70                  | -111@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-1040J  | 1040                  | 5.0                  | 7.0                       | 21                        | -20                     | -70                  | -105@25KHz                        | 19.5x19.5x6.5     |
| RTPA6-1121.5 | 1121.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1131.5 | 1131.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1141.5 | 1141.50               | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1176.5 | 1176.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1186.5 | 1186.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1197.5 | 1197.50               | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1207.5 | 1207.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1216   | 1216.0                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1242.5 | 1242.50               | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1261   | 1261.0                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1266.5 | 1266.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1287.5 | 1287.50               | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1291.9 | 1291.9                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1297.5 | 1297.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1303.1 | 1303.1                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1311.5 | 1311.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1312.5 | 1312.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1318.2 | 1.18.2                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1327.5 | 1327.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1336.9 | 1336.9                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1348.1 | 1348.1                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1356.5 | 1356.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1363.2 | 1363.2                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1357.5 | 1357.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1372.5 | 1372.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1377.5 | 1377.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1386.9 | 1386.9                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |

## Single Fixed PLL Module

### Specification

| Part Number  | Frequency Range (MHz) | Supply Voltage (Vdc) | Output Power (dBm.) (typ) | Current Consump. (mA,max) | 2 <sup>nd</sup> Harmonic (dBc,typ) | Spurious Level (dBc) | Phase Noise @25KHz (dBc/Hz) (max) | Dim. (WxLxH) (mm) |
|--------------|-----------------------|----------------------|---------------------------|---------------------------|------------------------------------|----------------------|-----------------------------------|-------------------|
| RTPA6-1398.1 | 1398.1                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1401.5 | 1401.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1402.5 | 1402.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1408.2 | 1408.2                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1413.2 | 1413.2                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1417.5 | 1407.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RPA6-1415.0  | 1415.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1426.9 | 1426.9                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1427.5 | 1427.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1431.9 | 1431.9                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1432.5 | 1432.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1440.  | 1440                  | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1442.5 | 1442.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1447.5 | 1447.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1443.1 | 1443.1                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1450.0 | 1450.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1452.5 | 1452.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1453.2 | 1453.2                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1455.0 | 1455.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1458.2 | 1458.2                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1460   | 1460                  | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1472.5 | 1472.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA1477.5   | 1477.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1485   | 1485.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1487.5 | 1487.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1495   | 1495.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1500   | 1500                  | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1512.5 | 1512.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| TPA6-1557.5  | 1557.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1580   | 1580.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1592.5 | 1592.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA4-1614.0 | 1614                  | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1619.0 | 1619.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA4-1621.5 | 1621.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1637.5 | 1637.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1662.5 | 1662.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1650   | 1650.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1664.0 | 1664.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA4-1675.0 | 1675.0                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA6-1677.5 | 1677.5                | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA4-1685J  | 1685                  | 5.0                  | 3.0                       | 50                        | -20                                | -70                  | -105@10KHz                        | 19.5x19.5x6.5     |
| RTPA4-1795JR | 1795                  | 5.0                  | 2.0                       | 21 typ..                  | -20                                | -70                  | -104@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-1799   | 1799.10               | 5.0                  | 0.0                       | 20                        | -20                                | -65                  | -101@25KHz                        | 19.5x19.5x6.5     |
| RTPA4-1844   | 1844.10               | 5.0                  | 0.0                       | 20                        | -20                                | -65                  | -101@25KHz                        | 19.5x19.5x6.5     |

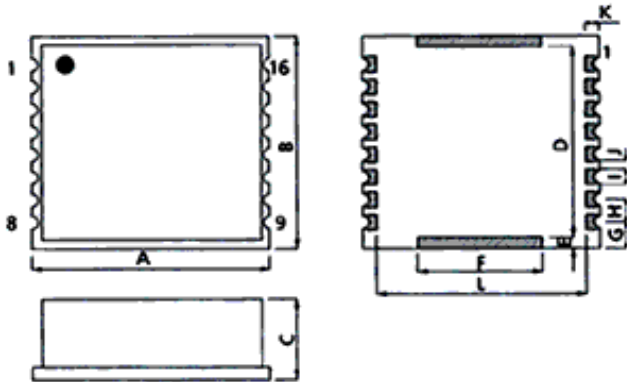
## Single Fixed PLL Module

### Specification

| Part Number  | Frequency Range (MHz) | Supply Voltage (Vdc) | Output Power (dBm.) (typ) | Current Consump. (mA,max) | 2'nd Harmonic (dBc,typ) | Spurious Level (dBc) | Phase Noise @ 25KHz (dBc/Hz) (max) | Dim. (WxLxH) (mm) |
|--------------|-----------------------|----------------------|---------------------------|---------------------------|-------------------------|----------------------|------------------------------------|-------------------|
| RTPA4-1849.0 | 1849.0                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -104@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-1894.0 | 1894.0                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -104@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-1856.5 | 1856.5                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -104@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-1940J  | 1940                  | 5.0                  | 3.0                       | 21                        | -20                     | -70                  | -104@25KHz                         | 19.5x19.5x6.5     |
| RTPA6-2017.5 | 2017.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -100@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2060J  | 2060                  | 5.0                  | 1.0                       | 21                        | -20-                    | -70                  | -100@25KHz                         | 19.5x19.5x6.5     |
| RTPA6-2071.9 | 2071.9                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2121.9 | 2121.9                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2152.5 | 2152.5                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2166.9 | 2166.9                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2176.0 | 2176.0                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2196   | 2196.00               | 5.0                  | 0.0                       | 20                        | -20                     | -65                  | -98@25KHz                          | 19.5x19.5x6.5     |
| RTPA6-2157.5 | 2157.5                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2177.2 | 2177.2                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2193.2 | 2193.2                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2202.2 | 2202.2                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2218R  | 2218                  | 5.0                  | 3.0                       | 20                        | -20                     | -70                  | -99@25KHz                          | 19.5x19.5x6.5     |
| RTPA6-2221.0 | 2221.0                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2222.2 | 2222.2                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA8-2225-C | 2225.00               | 24.0                 | 14                        | 150                       | -20                     | -65                  | -93@10KHz                          | 59.0x70.0x20.0    |
| RTPA4-2231   | 2231.00               | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2237.2 | 2237.2                | 5.0                  | 3.0                       | 50                        | -20                     | -70                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2241   | 2241.00               | 5.0                  | 0.0                       | 20                        | -20                     | -65                  | -98@25KHz                          | 19.5x19.5x6.5     |
| RTPA4-2241   | 2241.00               | 5.0                  | 0.0                       | 20                        | -20                     | -65                  | -98@25KHz                          | 19.5x19.5x6.5     |
| RTPA6-2257.2 | 2257.2                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2276   | 2276.10               | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA6-2282.2 | 2282.2                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2291   | 2291.0                | 5.0                  | 0.0                       | 20                        | -20                     | -65                  | -97@25KHz                          | 19.5x19.5x6.5     |
| RTPA4-2296.0 | 2296.0                | 5.0                  | 3                         | 50                        | -20                     | -65                  | -100@10KHz                         | 19.5x19.5x6.5     |
| RTPA8-2300-C | 2300.00               | 24.0                 | 14                        | 150                       | -20                     | -65                  | -93@10KHz                          | 59.0x70.0x20.0    |
| RTPA6-2302.2 | 2302.2                | 5.0                  | 3.0                       | 50                        | -20                     | -65                  | -105@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2303.5 | 2303.5                | 5.0                  | 3                         | 50                        | -20                     | -65                  | -100@10KHz                         | 19.5x19.5x6.5     |
| RTPA4-2400   | 2400                  | 5.0                  | 0.0                       | 28                        | -20                     | -70                  | -99@25KHz                          | 19.5x19.5x6.5     |
| RTPA4-2464R  | 2464                  | 5.0                  | 3.0                       | 20                        | -20                     | -70                  | -99@25KHz                          | 19.5x19.5x6.5     |
| RTPD7-2500R  | 2500                  | 5.0                  | 0                         | 36                        | -                       | -70                  | -109@10KHz                         | 29.0x30.0x8.0     |
| RTPD7-2513R  | 2512.5                | 5.0                  | 0                         | 36                        | -                       | -70                  | -112@10KHz                         | 29.0x30.0x8.0     |
| RTPD7-2560R  | 2560                  | 5.0                  | 3                         | 36                        | -                       | -70                  | -112@10KHz                         | 29.0x30.0x8.0     |
| RTPD7-2573R  | 2572.5                | 5.0                  | 0                         | 36                        | -                       | -70                  | -109@10KHz                         | 29.0x30.0x8.0     |
| RTPD7-2643R  | 2642.5                | 5.0                  | 0                         | 36                        | -                       | -70                  | -110@10KHz                         | 29.0x30.0x8.0     |
| RTPD7-3700R  | 3700                  | 5.0                  | 0                         | 36                        | -                       | -70                  | -101@10KHz                         | 29.0x30.0x8.0     |
| RTPA4-4900   | 4900                  | 5.0                  | 0.0                       | 33                        | -20                     | -70                  | -86@25KHz                          | 19.5x19.5x6.5     |

**Mechanical dimensions & Pin configurations**

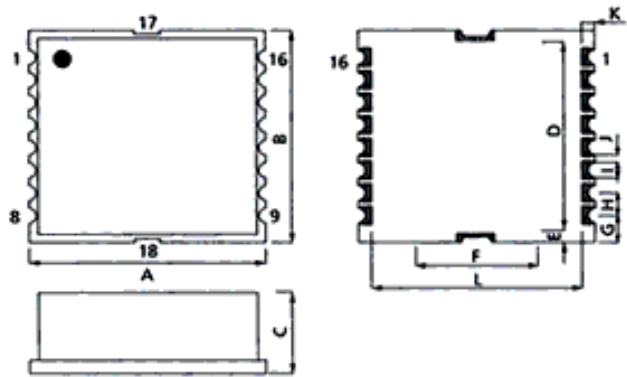
■ PA2-package (19.5 x 19.5 x 6.5)



| Dimension (mm) |       |                   |       |
|----------------|-------|-------------------|-------|
| A              | 19.5  | G                 | 2.388 |
| B              | 19.5  | H                 | 2.032 |
| C              | 6.5   | I                 | 1.532 |
| D              | 17.00 | J                 | 0.5   |
| E              | 1.00  | K                 | 1.0   |
| F              | 10.00 | tolerance : ± 0.2 |       |

| Pin No.                   | Connection | Pin No. | Connection  |
|---------------------------|------------|---------|-------------|
| 1                         | Clock      | 9       | Vcc         |
| 2                         | Data       | 13      | RF Out      |
| 3                         | Enable     | 15      | Vcp         |
| 4                         | Osc. In    | 16      | Look Detect |
| All other pins are GROUND |            |         |             |

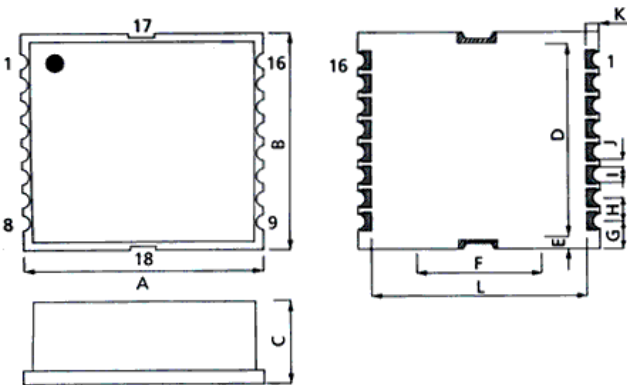
■ PA3-package (19.5 x 19.5 x 6.5)



| Dimension (mm) |       |                   |       |
|----------------|-------|-------------------|-------|
| A              | 19.5  | G                 | 2.388 |
| B              | 19.5  | H                 | 2.032 |
| C              | 6.5   | I                 | 1.532 |
| D              | 17.00 | J                 | 0.5   |
| E              | 1.00  | K                 | 1.0   |
| F              | 4.00  | tolerance : ± 0.2 |       |

| Pin No.                   | Connection | Pin No. | Connection  |
|---------------------------|------------|---------|-------------|
| 1                         | Osc. In    | 6       | Look Detect |
| 2                         | Clock      | 9       | Vcc         |
| 3                         | Data       | 13      | RF out      |
| 4                         | Enable     | 16      | Vcp         |
| All other pins are GROUND |            |         |             |

■ PA4-package (19.5 x 19.5 x 6.5)

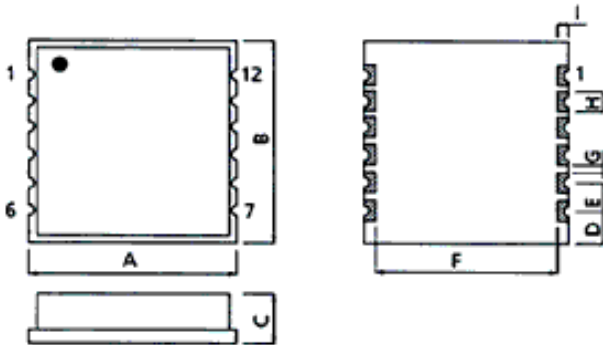


| Dimension (mm) |       |                   |       |
|----------------|-------|-------------------|-------|
| A              | 19.5  | G                 | 2.388 |
| B              | 19.5  | H                 | 2.032 |
| C              | 6.5   | I                 | 1.532 |
| D              | 17.00 | J                 | 0.5   |
| E              | 1.00  | K                 | 1.0   |
| F              | 10.00 | tolerance : ± 0.2 |       |

| Pin No.                   | Connection | Pin No. | Connection  |
|---------------------------|------------|---------|-------------|
| 1                         | GND        | 9       | Vcc         |
| 2                         | GND        | 13      | RF Out      |
| 3                         | GND        | 15      | Vcp         |
| 4                         | Osc. In    | 16      | Lock Detect |
| All other pins are GROUND |            |         |             |

**Mechanical dimensions & Pin configurations**

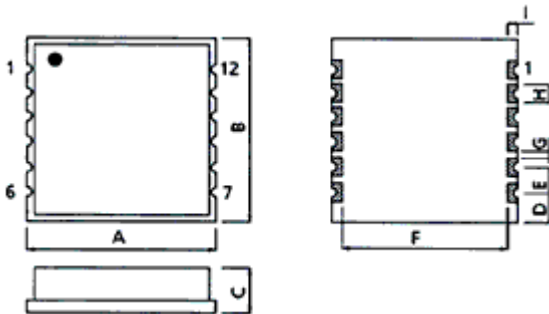
■ PS1-package (15.5 x 15.5 x 4.0)



| Dimension (mm) |      |                   |       |
|----------------|------|-------------------|-------|
| A              | 15.5 | F                 | 13.36 |
| B              | 15.5 | G                 | 0.63  |
| C              | 4.0  | H                 | 1.40  |
| D              | 2.42 | I                 | 0.82  |
| E              | 2.03 | tolerance : ± 0.2 |       |

| Pin No.                   | Connection | Pin No. | Connection  |
|---------------------------|------------|---------|-------------|
| 1                         | Clock      | 7       | Vcc         |
| 2                         | Data       | 9       | RF Out      |
| 3                         | Enable     | 11      | Look Detect |
| 4                         | Osc. In    | 12      | Vcp         |
| All other pins are GROUND |            |         |             |

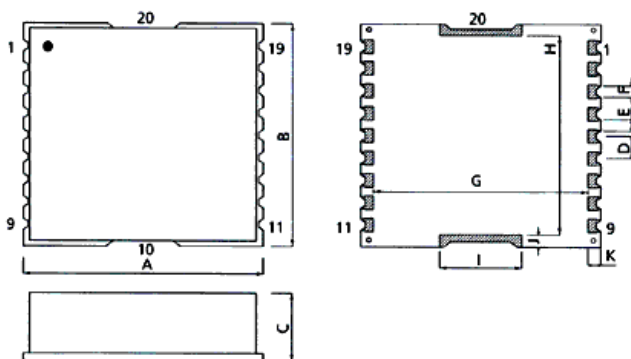
■ PM1-package (14.0 x 14.5 x 4.0)



| Dimension (mm) |      |                   |       |
|----------------|------|-------------------|-------|
| A              | 14.0 | F                 | 13.36 |
| B              | 14.5 | G                 | 0.63  |
| C              | 4.0  | H                 | 1.40  |
| D              | 2.42 | I                 | 0.82  |
| E              | 2.03 | tolerance : ± 0.2 |       |

| Pin No.                   | Connection  | Pin No. | Connection |
|---------------------------|-------------|---------|------------|
| 2                         | Clock       | 8       | Osc. In    |
| 3                         | Vcc(VCO)    | 9       | Vcp(PLL)   |
| 4                         | Look Detect | 10      | Data       |
| 5                         | RF Out      | 11      | Enable     |
| All other pins are GROUND |             |         |            |

■ PD3-package (29.0 x 30.0 x 8.0)

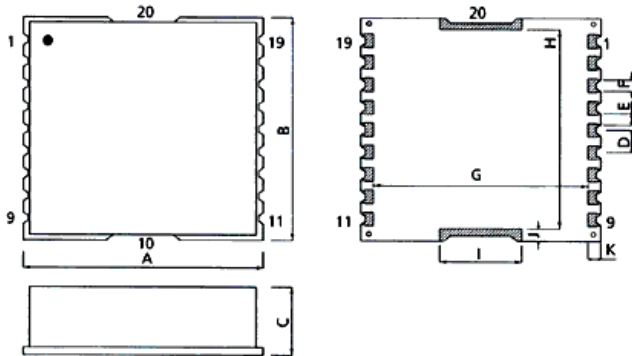


| Dimension (mm) |      |                   |      |
|----------------|------|-------------------|------|
| A              | 29.0 | G                 | 26.0 |
| B              | 30.0 | H                 | 27.0 |
| C              | 8.0  | I                 | 9.8  |
| D              | 3.0  | J                 | 1.5  |
| E              | 1.1  | K                 | 1.5  |
| F              | 0.9  | tolerance : ± 0.2 |      |

| Pin No.                   | Connection | Pin No. | Connection  |
|---------------------------|------------|---------|-------------|
| 1                         | Vcp(PLL)   | 9       | Vcc2        |
| 2                         | Clock      | 11      | Vcc1        |
| 3                         | Data       | 14      | RF1 Out     |
| 4                         | Enable     | 18      | Osc. In     |
| 6                         | RF2 Out    | 19      | Lock Detect |
| All other pins are GROUND |            |         |             |

**Mechanical dimensions & Pin configurations**

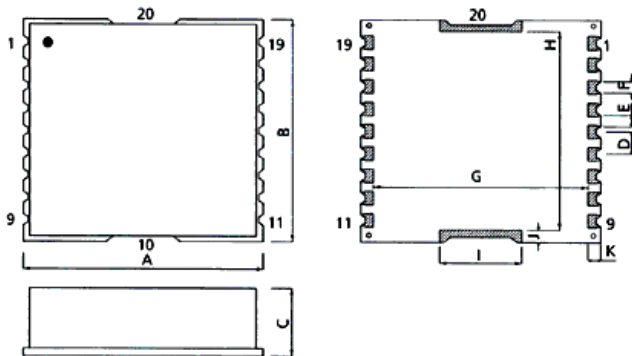
■ PD4-package (29.0 x 30.0 x 8.0)



| Dimension (mm) |      |                   |      |
|----------------|------|-------------------|------|
| A              | 29.0 | G                 | 26.0 |
| B              | 30.0 | H                 | 27.0 |
| C              | 8.0  | I                 | 9.8  |
| D              | 3.0  | J                 | 1.5  |
| E              | 1.1  | K                 | 1.5  |
| F              | 1.9  | tolerance : ± 0.2 |      |

| Pin No. | Connection | Pin No.                | Connection  |
|---------|------------|------------------------|-------------|
| 1       | Vcp        | 15                     | RF Out      |
| 3       | Osc. In    | 19                     | Lock Detect |
| 11      | Vcc        | All other pins are GND |             |

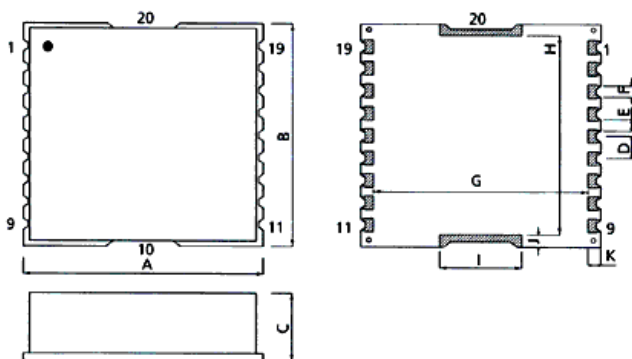
■ PD5-package (29.0 x 30.0 x 8.0)



| Dimension (mm) |      |                   |      |
|----------------|------|-------------------|------|
| A              | 29.0 | G                 | 26.0 |
| B              | 30.0 | H                 | 27.0 |
| C              | 8.0  | I                 | 9.8  |
| D              | 3.0  | J                 | 1.5  |
| E              | 1.1  | K                 | 1.5  |
| F              | 1.9  | tolerance : ± 0.2 |      |

| Pin No. | Connection | Pin No.                | Connection  |
|---------|------------|------------------------|-------------|
| 1       | Vcp        | 19                     | Lock Detect |
| 11      | Vcc        | All other pins are GND |             |
| 15      | RF Out     |                        |             |

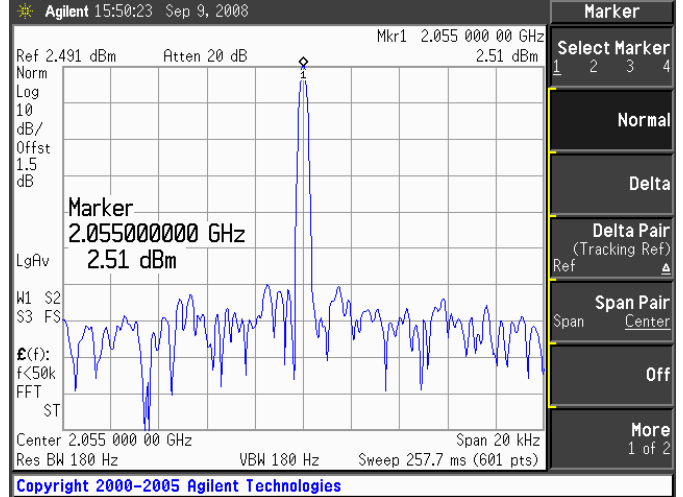
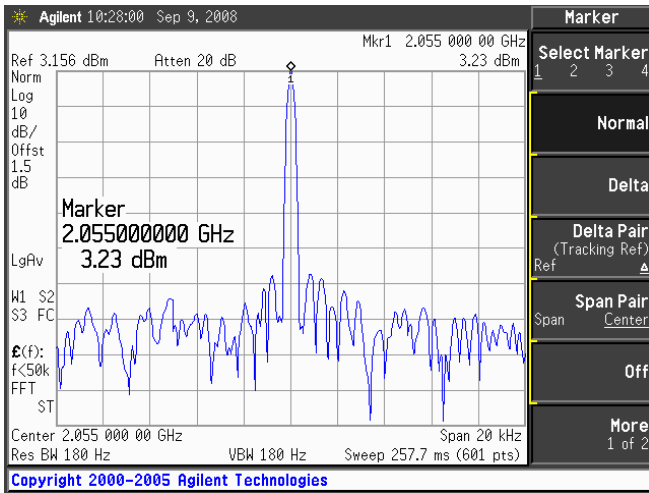
■ PD7-package (29.0 x 30.0 x 8.0)



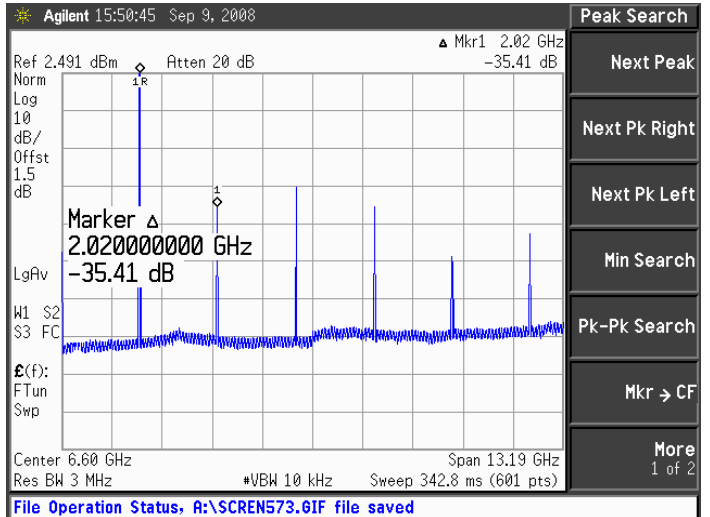
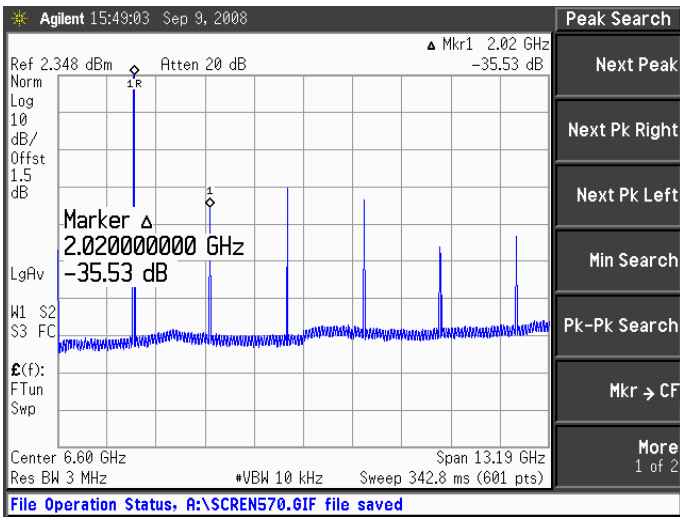
| Dimension (mm) |      |                   |      |
|----------------|------|-------------------|------|
| A              | 29.0 | G                 | 26.0 |
| B              | 30.0 | H                 | 27.0 |
| C              | 8.0  | I                 | 9.8  |
| D              | 3.0  | J                 | 1.5  |
| E              | 1.1  | K                 | 1.5  |
| F              | 1.9  | tolerance : ± 0.2 |      |

| Pin No. | Connection | Pin No.                | Connection  |
|---------|------------|------------------------|-------------|
| 1       | Vcp        | 11                     | Vcc         |
| 2       | Enable     | 15                     | RF Out      |
| 3       | Data       | 19                     | Lock Detect |
| 4       | Clock      | All other pins are GND |             |
| 5       | Osc. In    |                        |             |

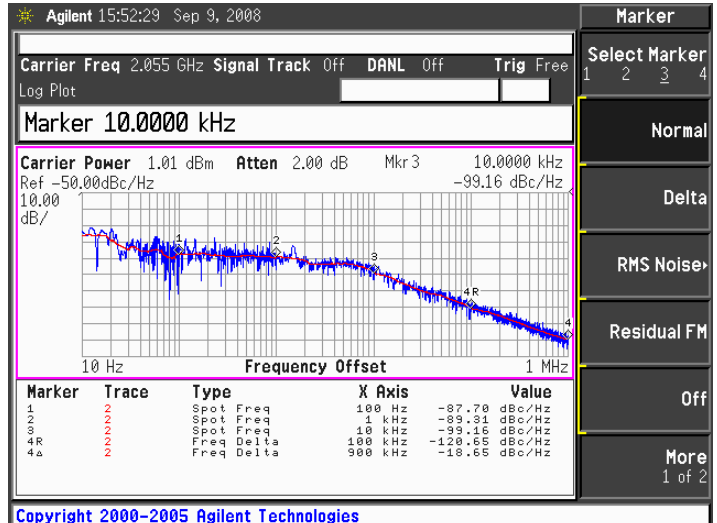
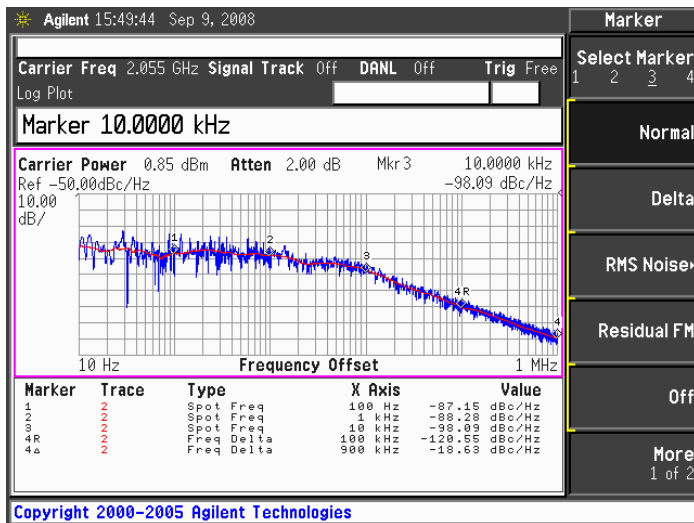
**Performance**



**SPAN 20kHz**



**Harmonic**



**Phase Noise**