

**Synthesizer, 2.0-6.0 GHz, 13dBm, +15Volts**  
**100KHz Step Size, 10 MHz Ext. Ref. (Model 2)**  
**RSYNTH-2-6-100KHz-Sf-13d-15V-ER10M-M2-u1**

**RSYNTH-2-6-100KHz-Sf-13d-15V-ER10M-M2-u1** tunes from 2.0 to 6.0GHz, in 100KHz steps. The RF output power is +13dBm. minimum. The unit phase locks to external reference of 10MHz. The phase noise is better than -90dBc/Hz at 10 KHz offset, (subject to the reference). See phase plot of a typical unit on page 3 and 4.

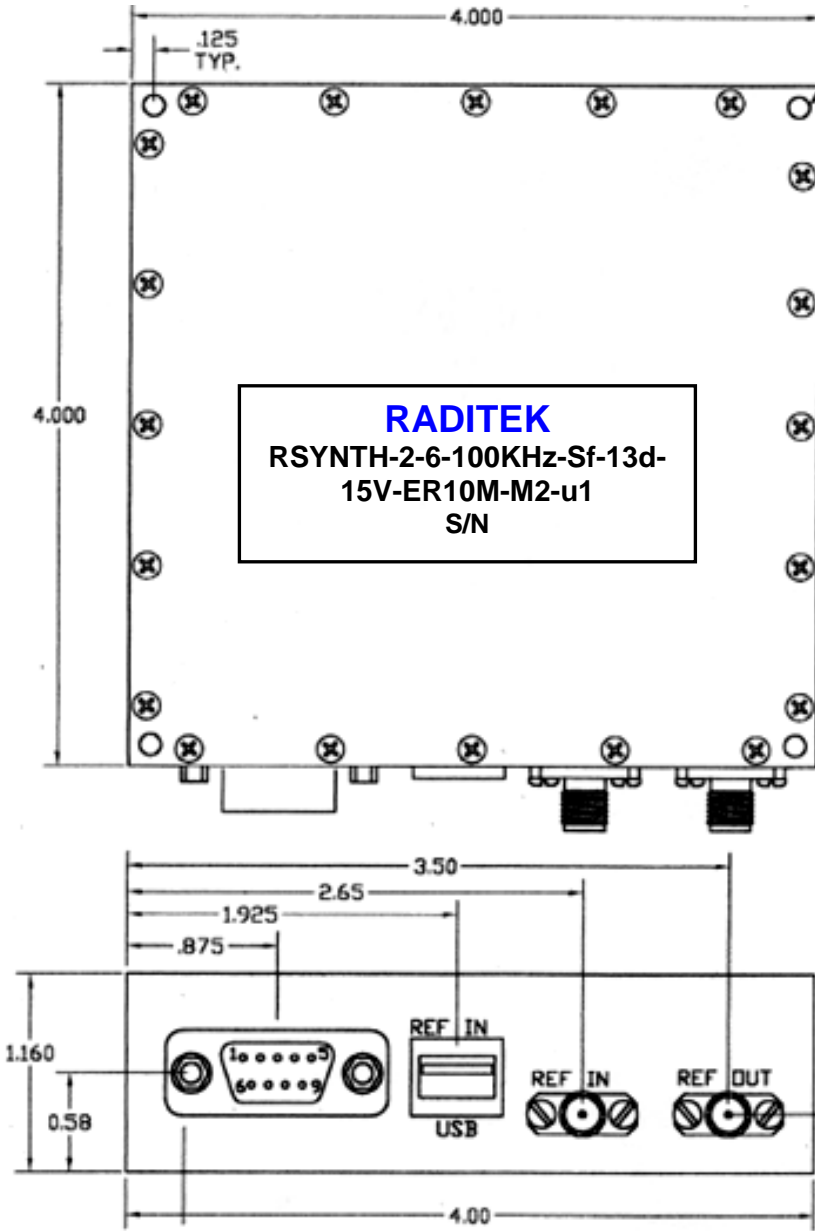


| Specifications                         |                                 | Units  |
|--|---------------------------------|--------|
| Frequency Range :                      | <b>2.0-6.0</b>                  | GHz    |
| Frequency Step                         | <b>100</b>                      | KHz    |
| Switching Speed Full Band              | <b>20</b>                       | ms     |
| Frequency Stability and accuracy       | <b>Same as reference</b>        |        |
| Phase Noise (typ.)                     |                                 |        |
| • 10 kHz                               | -90 max                         | dBc/Hz |
| • 100kHz                               | -115 max                        | dBc/Hz |
| • 1MHz                                 | -138 max                        | dBc/Hz |
| Spurious (typ.)                        | -60                             | dBc    |
| Harmonics **                           | -12                             | dBc    |
| Power Out                              | +12 minimum                     | dBm    |
| Output power variation (freq. & temp.) | ±2.5                            | dB     |
| Load VSWR                              | 3:1                             |        |
| Input reference frequency              | 10                              | MHz    |
| Input ref. freq. level                 | 0 ±2dB                          | dBm    |
| Frequency Control                      | 4 wire serial input             |        |
| Acquisition time                       | 1 clock data PLL latch          | msec   |
|  | Enable and DAC latch            |        |
| Phase lock indicator                   | High= lock (TTL compatible)     |        |
| DC Power                               |                                 |        |
| • +15 Volts (Max.)                     | +500 max.                       | mA     |
| Power consumption                      | 7.5 max. (@ 1 Amp current)      | Watts  |
| RF Connectors                          | SMA female                      |        |
| Digital & DC connection                | DB9 Male                        |        |
| Operating Temperature Range (surface)  | 0 to 60                         | °C     |
| Storage Temperature Range              | -55 to 85                       | °C     |
| Shock                                  | 90 RH (@ 40°C)                  | %      |
| Vibration                              | 20 G/ 10 ms; 4 G/ 20 Hz -20 kHz |        |

\*For full band, 20ms and smaller steps (eg10 MHz), the step will be below 50 µs and at 50 MHz speed will be ~500 µs.

\*\*Harmonics are -14dBc, worst case and - 16dBc. Worst case harmonics are at the low end of the Frequency band between 2.0 to 3.0 GHz. Above 3GHz it is better than -50dBc

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| 9 PIN CONN | CONNECTOR FUNCTIONS |
|------------|---------------------|
| 1          | +15V IN             |
| 2          | Not connected       |
| 3          | SPI CLK IN          |
| 4          | SPI DATA OUT        |
| 5          | GND                 |
| 6          | Not connected       |
| 7          | SPI DATA OUT        |
| 8          | SPI SLCT IN         |
| 9          | LOCK DET            |
| J1         | RF Output           |
| J2         | Ref IN              |
| USB        | Ref IN              |

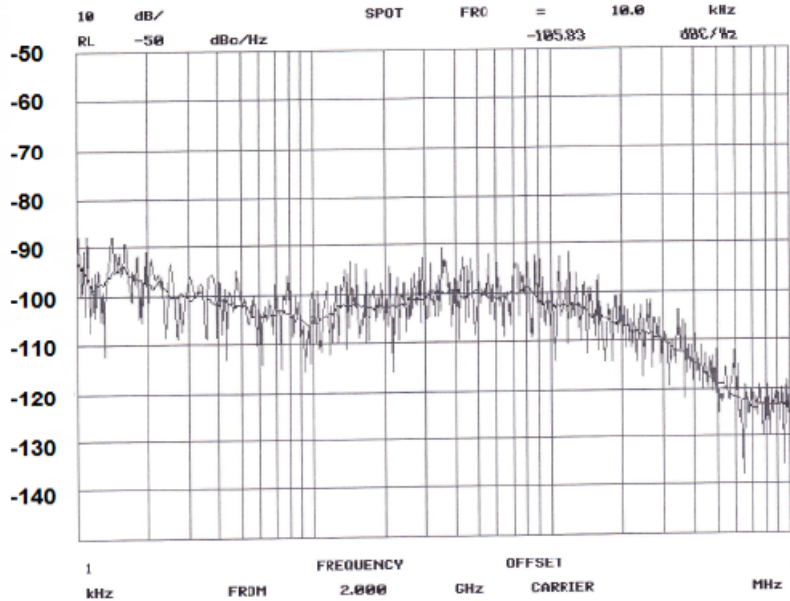
**NOTES:**

1. THIS UNIT ARE AVAILABE WITH AN INTERNAL TCXD AND HAVE STABILITY OF ± PPM OVER THE TEMPERATURE RANGE.
2. THE FREQUENCY ADJUSTMENT IS ONLY APPLICABLE ON UNITS WITH INTERNAL REFERENCE.
3. THE 'REF IN' CONNECTOR IS NOT PROVIDED ON UNITS WITH INTERNAL REFERENCE.

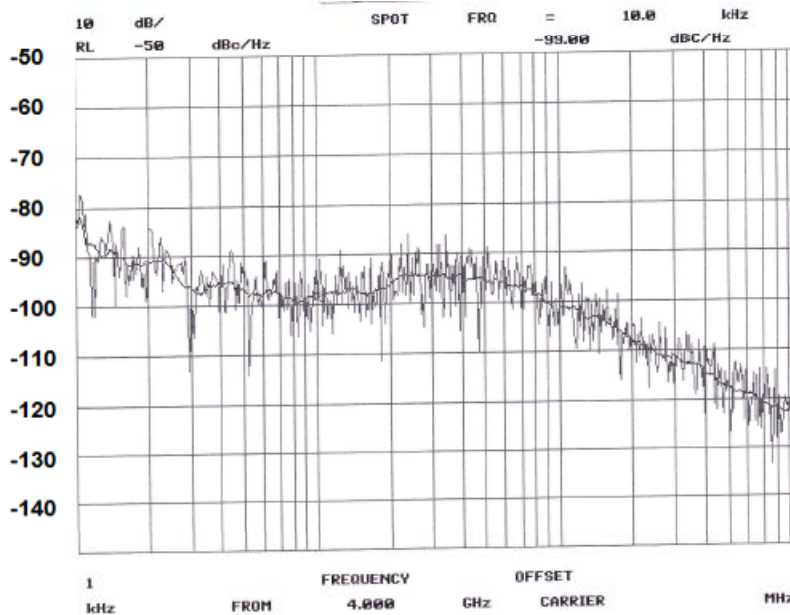
**Units: inch**  
**Not to scale**

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Phase noise  
 dBc/Hz at 2GHz



Phase noise  
 dBc/Hz at 4GHz



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Phase noise  
dBc/Hz at 6GHz

