

## Engineering Development Model

### Frequency Synthesizer

KSN-EDR9428

#### Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability. At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.



Please click "Back", and then click "Contact Us" for Applications support.

CASE STYLE : DK1042

| ELECTRICAL SPECIFICATIONS 50Ω, over -25°C to +55°C |         |         |         |        |
|----------------------------------------------------|---------|---------|---------|--------|
| Parameter                                          | Min.    | Typ.    | Max.    | Units  |
| Frequency                                          | 2037.28 |         | 2037.28 | MHz    |
| Step size                                          |         | 2140    |         | kHz    |
| Settling Time Within ±1kHz                         |         | 8       |         | msec   |
| Output Power                                       | -3      | 0       | +4      | dBm    |
| Phase Noise                                        |         |         |         |        |
| at 100 Hz offset                                   |         | -82     |         | dBc/Hz |
| at 1 kHz offset                                    |         | -92     | -86     | dBc/Hz |
| at 10 kHz offset                                   |         | -99     | -94     | dBc/Hz |
| at 100 kHz offset                                  |         | -127    | -122    | dBc/Hz |
| at 1000 kHz offset                                 |         | -148    | -142    | dBc/Hz |
| Integrated SSB Phase Noise                         |         | -49     |         | dBc    |
| Ref & Comp Spurious Suppression                    |         | -105    |         | dBc    |
| 0.5 Step size Spurious Suppression                 |         | -113    |         | dBc    |
| Non-Harm. Spurious Suppression                     |         | -90     |         | dBc    |
| Harmonic Suppression                               |         | -33     | -26     | dBc    |
| Supply voltage                                     |         |         |         | V      |
| VCO                                                |         | 5       |         | V      |
| PLL                                                |         | 3       |         | V      |
| Supply current                                     |         |         |         | mA     |
| VCO                                                |         | 44      | 52      | mA     |
| PLL                                                |         | 14      | 22      | mA     |
| Reference In (External)                            |         |         |         |        |
| Frequency                                          |         | 10.7    |         | MHz    |
| Amplitude                                          |         | 1       |         | Vp-p   |
| Impedance                                          |         | 100     |         | kΩ     |
| Ph. N @ 1kHz                                       |         | -145    |         | dBc/Hz |
| Input Logic Levels                                 |         |         |         | V      |
| Logic high                                         | 1.4     |         | 3       |        |
| Logic Low                                          |         |         | 0.6     |        |
| Digital Lock Detect                                |         |         |         | V      |
| Locked                                             | 1.4     |         | 3       |        |
| Unlocked                                           |         |         | 0.4     |        |
| Frequency Synthesizer PLL                          |         | ADF4153 |         |        |

| ABSOLUTE MAXIMUM RATINGS    |                |
|-----------------------------|----------------|
| Operating Temperature       | -45°C to 85°C  |
| Storage Temperature         | -55°C to 100°C |
| VCO Supply Voltage          | 6V             |
| PLL Supply Voltage          | 4V             |
| Reference Frequency voltage | 3.6Vp-p        |
| Data, Clock & LE levels     | 3.3V           |

Power On sequence: Vcc VCO followed by Vcc PLL

Power Off sequence: Vcc PLL followed by Vcc VCO

| PIN CONNECTIONS |   |              |               |
|-----------------|---|--------------|---------------|
| RF OUT          | 7 | CLOCK        | 10            |
| VCC VCO         | 5 | DATA         | 11            |
| VCC PLL         | 1 | LATCH ENABLE | 12            |
| REF IN          | 3 | GROUND       | 2,4,6,8,13,14 |
| LOCK DETECT     | 9 |              |               |

#### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.  
C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"). Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCStore/terms.jsp](http://www.minicircuits.com/MCStore/terms.jsp)

