

# Engineering Development Model

## Frequency Synthesizer

KSN-EDR11011SA

### 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.



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CASE STYLE : DK1042

| ELECTRICAL SPECIFICATIONS 50Ω, over -5°C to +75°C |                    |         |      |        |
|---------------------------------------------------|--------------------|---------|------|--------|
| Parameter                                         | Min.               | Typ.    | Max. | Units  |
| Frequency                                         | 100                |         | 100  | MHz    |
| Step size                                         |                    | 10000   |      | kHz    |
| Settling Time                                     | Within ±1kHz       | 250     |      | μsec   |
| Output Power                                      | +1                 | +5      | +9   | dBm    |
| Phase Noise                                       | at 100 Hz offset   | -111    |      | dBc/Hz |
|                                                   | at 1 kHz offset    | -122    | -117 | dBc/Hz |
|                                                   | at 10 KHz offset   | -124    |      | dBc/Hz |
|                                                   | at 100 KHz offset  | -136    | -131 | dBc/Hz |
|                                                   | at 1000 kHz offset | -159    | -153 | dBc/Hz |
| Integrated SSB Phase Noise                        |                    | -75     |      | dBc    |
| Ref & Comp Spurious Suppression                   |                    | -88     |      | dBc    |
| Non-Harm. Spurious Suppression                    |                    | -90     |      | dBc    |
| Harmonic Suppression                              |                    | -23     |      | dBc    |
| Supply voltage                                    | VCO                | 5       |      | V      |
|                                                   | PLL                | 3       |      | V      |
| Supply current                                    | VCO                | 36      | 44   | V      |
|                                                   | PLL                | 4       | 12   | V      |
| Reference In (External)                           | Frequency          | 10      |      | MHz    |
|                                                   | Amplitude          | 1       |      | Vp-p   |
|                                                   | Impedance          | 100     |      | kΩ     |
|                                                   | Ph. N @ 1kHz       | -145    |      | dBc/Hz |
| Input Logic Levels                                | Logic high         | 2.4     | 3    | V      |
|                                                   | Logic Low          |         | 0.6  | V      |
| Digital Lock Detect                               | Locked             | 2.6     | 3    | V      |
|                                                   | Unlocked           |         | 0.4  | V      |
| Frequency Synthesizer PLL                         |                    | ADF4001 |      |        |

| 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 | 5.8Vp-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.  
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