

**PRODUCT SUMMARY**

# SKY73100: 750 – 900 MHz High Performance VCO/Synthesizer Solution for 2G/3G Base Station Transceiver Applications

**Applications**

- 2G/3G base station transceivers:
  - GSM/EDGE, CDMA, UMTS/WCDMA, iDEN
- Land mobile radio
- ISM band transceivers
- High performance radio links
- RF identification

**Features**

- Complete high performance signal source
- Sigma-delta fractional-N synthesizer
- Integrated high performance VCO
- Excellent VCO phase noise:
  - 130 dBc/Hz at 100 kHz offset
  - 150 dBc/Hz at 800 kHz offset
  - 152 dBc/Hz at 1 MHz offset
- Less than 1° RMS integrated phase noise (100 Hz – 100 kHz)
- Greater than 60 dB on/off RF switch isolation
- Low spurious levels
- Fast settling time
- Four selectable frequency bands
- Harmonic levels less than –25 dBc
- Integrated tank circuit
- Programmable charge pump current
- Digital lock detect
- Small, MCM (32-pin, 8 x 10 mm) Pb-free package (MSL3, 250 °C per JEDEC J-STD-020)

**NEW** Skyworks offers lead (Pb)-free “environmentally friendly” packaging that is RoHS compliant (European Parliament for the Restriction of Hazardous Substances).

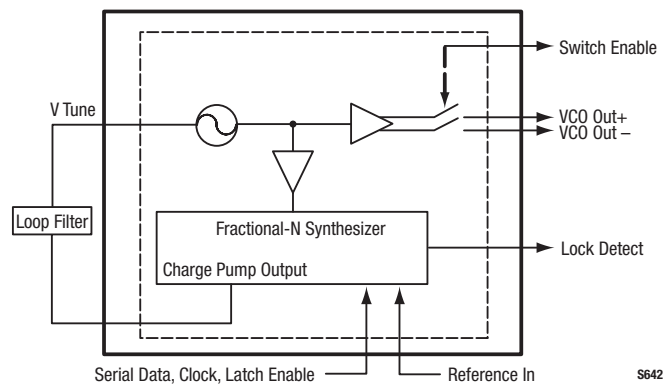


**Description**

The SKY73100 is a fully integrated, high performance signal source for high dynamic range transceivers. This solution includes a 21-bit sigma-delta fractional-N synthesizer, high Q tank circuit, output switch, and an extremely low phase noise Voltage Controlled Oscillator (VCO). The device offers four separately selectable frequency bands from 750 MHz to 900 MHz.

The integrated phase noise from 100 Hz to 100 kHz measures less than 1° RMS. The phase noises at 800 kHz and 1 MHz offset are –150 dBc/Hz and –152 dBc/Hz, respectively, making the SKY73100 an ideal solution for GSM/EDGE, WCDMA, and CDMA base station transceivers. For GSM/EDGE receivers, the SKY73100 also includes an on/off switch that provides more than 60 dB of RF isolation.

The SKY73100 VCO/Synthesizer is provided in a compact, 32-pin Multi-Chip Module (MCM). A functional block diagram of the device is shown in Figure 1. Table 1 presents a performance overview.



**Figure 1. SKY73100 VCO/Synthesizer Block Diagram**

**Table 1. SKY73100 Performance Overview**

Parameter	Typical Performance
Frequency Range	750–900 MHz
Output power	+3 dBm
2 <sup>nd</sup> harmonic	–30 dBc
3 <sup>rd</sup> harmonic	–45 dBc
Settling time	300 μs
On/off isolation	65 dB
Minimum step size	3.5 Hz (with 6.5 MHz comparison frequency)
Integrated RMS phase noise (10 Hz – 100 kHz)	1 degree
VCO phase noise:	
@ 10 kHz	–100 dBc/Hz
@ 100 kHz	–130 dBc/Hz
@ 400 kHz	–143 dBc/Hz
@ 800 kHz	–150 dBc/Hz
@ 1 MHz	–152 dBc/Hz
@ 10 MHz	–166 dBc/Hz

**Ordering Information**

Model Name	Manufacturing Part Number	Product Revision
SKY73100 VCO/Synthesizer	SKY73100 -xx (Pb-free package)	

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