PRODUCT SUMMARY

SKY69002 and SKY69001 Low-Phase-Noise Wireless NetSync™ with Integrated BAW

The SKY69002 and SKY69001 use sixth-generation DSPLL® and MultiSynth™ technologies and integrates the functions of a low phase noise 5G/eCPRI wireless jitter attenuator with a Synchronous Ethernet (SyncE)/ IEEE 1588 PTP network synchronizer clock into a single IC device.

The SKY69002 has 16 outputs and supports JESD204B/C subclasses 0, 1, and 2.

The SKY69001 has 12 outputs and supports JESD204B/C subclasses 0 and 1. The SKY69001 is recommended for lower cost radio applications such as picocells, small cells and wireless repeaters which do not require all 16 outputs.

The SKY69002 and SKY69001 integrates both a Skyworks BAW oscillator and a crystal oscillator to provide ultra-low phase noise and jitter references for the high-performance RFPLL. No external XTAL/XO/ VCXO phase noise reference is required. An external OCXO/TCXO reference is not required, but is typically necessary for IEEE 1588 Ethernet and SyncE applications.

The BAW referenced RFPLL generates high-performance, ultra-low phase noise CPRI clocks for wireless RRHs with 47 fs typical RMS jitter. The DSPLLs are fully featured network synchronization phase-locked-loops with adjustable DCO supporting IEEE 1588 and SyncE.

The device is programmable through a primary I^2C or SPI interface. Boot-up configurations can be stored in either fuse-based non-volatile memory (NVM) or reprogrammable flash memory for in-field updates to the boot-up configuration.

The device can be paired with optional AccuTime™ IEEE 1588 software for a complete IEEE 1588v2 solution for phase and frequency synchronization. AccuTime 1588 software includes a unique servo algorithm paired with a protocol stack that uses a separate host processor.

Applications

- LTE-A and 5G Remote Radio Units (RRUs)
- JESD204B/C clock generation
- IEEE 1588 TimeReceiver clocks (T-TSC, T-TSC-A, T-TSC-P)
- IEEE 1588 Boundary clocks (T-TBC, T-TBC-A, T-TBC-P)
- IEEE 1588 Grandmaster clocks (T-GM) Remote Access Networks (RANs), picocells, small cells
- Remote Radio Heads (RRHs), wireless repeaters, mobile fronthaul and backhaul

Key Features

- Integrated Skyworks Bulk Acoustic Wave (BAW) oscillator and crystal oscillator references
- Ultra-low jitter 47 fs RMS typical
- 64-Lead LGA 9 x 9 mm, seven inputs
  - SKY69002: 16 outputs
  - SKY69001: 12 outputs
- Only 1.8 V VDD required for lower power
- Supports ITU-T G.8273.2, ITU-T G.8273.4, G.8262 (EEC Options 1 and 2), and G.8262.1
- Optional integrated flash memory and internal crystal
- Extended temperature range +95 °C ambient, +105 °C board
- Optional AccuTime™ IEEE 1588 Software
- Pb-free, RoHS compliant
- For RoHS and other product compliance information, see the Skyworks Certificate of Conformance

Ordering Information

Table 1. Ordering Guide

Ordering Part Number[1,2]	Number of Outputs	Integrated XTAL	Integrated Flash	AccuTime™ IEEE 1588 Software Support[3]	Package	Temperature Range
SK69002AAxxxxxGM	16	Yes	Yes	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69002BAxxxxxGM	16	Yes	No	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69002CAxxxxxGM	16	No	Yes	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69002DAxxxxxGM	16	No	No	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69002EAxxxxxGM	16	Yes	Yes	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69002FAxxxxxGM	16	Yes	No	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69002GAxxxxxGM	16	No	Yes	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69002HAxxxxxGM	16	No	No	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001AAxxxxxGM	12	Yes	Yes	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001BAxxxxxGM	12	Yes	No	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001CAxxxxxGM	12	No	Yes	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001DAxxxxxGM	12	No	No	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001EAxxxxxGM	12	Yes	Yes	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001FAxxxxxGM	12	Yes	No	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001GAxxxxxGM	12	No	Yes	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]
SK69001HAxxxxxGM	12	No	No	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C board[4]

1. Add an “R” at the end of the OPN to denote tape and reel ordering options.
2. Custom, factory preprogrammed devices are available as well as unconfigured base devices. See the figure below for 5-digit numerical sequence nomenclature.
3. AccuTime IEEE 1588 software is only supported on certain part grades. Use this table to determine which grades support AccuTime.
4. Ambient temperature of 105°C may not be possible with all configurations. This is dependent on device configuration. T_J cannot exceed a max of 125 °C.