PRODUCT SUMMARY

SKY69101 NetSync™ with Integrated BAW for 5G Fronthaul, Data Center, and Wireline IEEE 1588 Applications

Applications

- Core, metro, and edge switches and routers
- SmartNICs and data center switches
- 5G Fronthaul and O-RAN
  - Central unit (O-CU)
  - Distributed unit (O-DU)
  - Fronthaul gateway switches (FHGWS)
- IEEE 1588 T-GM, T-BC and T-TSC
- BBUs

Key Features

- Integrated Skyworks Bulk Acoustic Wave (BAW) oscillator and crystal oscillator references
- Ultra-low-jitter 46 fs RMS typical
- Only 1.8V VDD required for lower power
- Utilizes sixth-generation DSPLL® and MultiSynth™ technologies
- Supports IEEE 1588 with DCO adjustable at 1ppt resolution
- SyncE, SONET, and SDH compliant
- Supports ITU-T G.8273.2, ITU-T G.8273.4, G.8262 (EEC Options 1 and 2), and G.8262.1
- PCIe Gen 1/2/3/4/5/6 compliant
- Optional integrated flash memory
- Extended temperature range of +105 °C board
- AccuTime™ IEEE 1588 Software
  - Field tested proven with compliance reports available
  - ITU and O-RAN compliant
  - IEEE 1588 servo loop and protocol stack software runs on host processor
- For RoHS and other product compliance information, see the Skyworks Certificate of Conformance

Description

The SKY69101 NetSync™ Network Synchronizer clock utilizes Skyworks market-leading, sixth-generation DSPLL and MultiSynth technologies.

The SKY69101 device has four PLLs, two MultiSynth any-frequency dividers, and 16 outputs. This feature rich device integrates both a Skyworks BAW oscillator and an optional crystal oscillator to provide ultra-low jitter output clocks. No external XTAL/XO phase noise reference is required. An external OCXO/TCXO is required for stability and holdover. The SKY69101 does not require external loop filters and has internal voltage supply regulation that reduce susceptibility to supply noise.

NetSync clocks offer Synchronous Ethernet (SyncE) compliant wander filtering and software adjustment of output frequency and phase for IEEE 1588 applications while offering ultra-low jitter output clocks, which eliminates the need for a follow-on jitter attenuator device.

For IEEE 1588 Precision Time Protocol (PTP) applications, the SKY69101 device is optionally available with Skyworks AccuTime software to provide a full IEEE 1588-2008 compliant solution including operation in full timing support (FTS), partial timing support (PTS), and assisted partial timing support (APTS). Alternatively, the IEEE 1588-ready hardware features of the SKY69101 can be coupled with existing or third- party software to provide a complete solution.

This unique combination of features offers savings in system costs, PCB real estate, and power consumption, which makes them an ideal choice for today's complex equipment.

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	Board Temperature Range[4]
SKY69101AAxxxxxGM	16	Yes	Yes	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C
SKY69101BAxxxxxGM	16	Yes	No	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C
SKY69101CAxxxxxGM	16	No	Yes	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C
SKY69101DAxxxxxGM	16	No	No	No	64-Lead LGA 9 x 9 mm	–40 to 105 °C
SKY69101EAxxxxxGM	16	Yes	Yes	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C
SKY69101FAxxxxxGM	16	Yes	No	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C
SKY69101GAxxxxxGM	16	No	Yes	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C
SKY69101HAxxxxxGM	16	No	No	Yes	64-Lead LGA 9 x 9 mm	–40 to 105 °C

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.
3. AccuTime IEEE 1588 software is only supported on certain part grades. Use this table to determine which grades support AccuTime.
4. Board 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.