2409091568 SiWN917 NCP and SiWG917 SoC Datasheet Release v0.7

PCN Issue Date: Sep 09, 2024   **Effective Date:**   Dec 13, 2024

PCN Type: Datasheet

Description of Change

Silicon Labs is pleased to announce the release of datasheet version 0.7 for SiWN917 NCP (Network Connectivity Processor) and SiWG917 SoC.

Links to datasheets:
SiWN917 NCP: https://www.silabs.com/documents/public/data-sheets/siwx917-ncp-datasheet.pdf
SiWG917 SoC: https://www.silabs.com/documents/public/data-sheets/siwg917-datasheet.pdf

Reason for Change

Common notable changes for SiWN917 NCP v0.7 and SiWG917 SoC v0.7 are:
• Replaced references to "ThreadArch" with "Network Wireless Processor" and / or "NWP"
• Changed AI/ML mentions to more directly refer to the MVP block capabilities
• Corrected last character of OPN decoder, which is Reserved for these products
• Corrected package name to DR-QFN throughout document
• Updated typical electrical characteristics with characterization results
• 7.1 Absolute Maximum Ratings: Added absolute maximum voltage and current ratings for I/O pins
• 7.3.2 Power On Control (POC) and Reset Clarified POC and Reset functionality
• 7.x RF Characteristics Added supported WLAN channels for different regions
• 8. Reference Schematics, BOM and Layout Guidelines
    - Split schematics into separate figures with in-text notes for legibility
    - Updated component recommendations per final design guidelines
• Figure 9.2 PCB Landing Pattern - DR-QFN: Corrected dimensions C1, C2, C3, C4
• Updated WLAN & BLE Transmitter and Receiver typical data
• Updated current consumption typical data
• Updated Secure Debug to Debug Lock to match current functionality
• Presentation and formatting changes throughout document, including figure and table title assignments, units, cross-references, specification table formats, GPIO mux table formats, etc.

Changes specific to SiWN917 NCP v0.7:
• Table 2.1 List of OPNs on page 4: Removed OPN SiWN917M100XGTBA
• Removed references to external flash support
• Normalized pin names for SPI Secondary to HSPI Secondary to match documentation and software
• Removed non-implemented peripherals from block diagrams and text

Changes specific to SiWG917 SoC v0.7:
• Updated peripheral and signal names for consistency with software libraries
• Removed unsupported features: SIO, IrDA, RO temperature sensor, SCT input 1-3, SCT output 2-7
• 5.6.1.17 SPI Flash Controllers: Updated section to clarify QSPI operation and note that QSPI only available as flash interface
• Figure 5.1 NWP and M4 shared SRAM memory architecture on page 17 Corrected 192 KB SRAM bank memory multiplexing
• Updated section 5.6.1.20 with simplified options for PSRAM and Flash and added list of supported external PSRAM/Flash options. Detailed Supply configurations moved to AN1494

Impact on Form, Fit, Function, Quality, Reliability

• Form – No change
• Fit – No change
• Quality – No change
• Reliability – No Change
• Function: There has been a change in RF performance for WLAN and BLE. Also, there are some changes in the WLAN current consumption & MCU power consumption data. Please refer to the sections mentioned below in the datasheets for more details.

SiWN917 NCP v0.7 Datasheet
• Sections and sub-sections of 7.5 (7.5.1.1, 7.5.2, 7.5.3) for updated WLAN Tx/Rx and BLE Tx/Rx (7.5.4, 7.5.7, 7.5.8, 7.5.9, 7.5.10) Tx/Rx typical Data
• Section 7.6.1 for updated WLAN 2.4GHz current consumption Data

SiWG917 SoC v0.7 Datasheet
• Sections and sub-sections of 7.6 (7.6.1.1, 7.6.2, 7.6.3) for updated WLAN and BLE Tx/Rx (7.6.4, 7.6.7, 7.6.8, 7.6.9, 7.6.10) typical Data
• Section 7.7.1 for updated WLAN 2.4GHz current consumption Data and 7.7.3 for MCU Power consumption data

Product Identification

```
Existing Part #
SIWG917M111MGTBA
SIWG917M111MGTBAR
SIWN917M100LGTBA
SIWN917M100LGTBAR
```

Last Date of Unchanged Product: Dec 13, 2024

Qualification Samples

N/A

Customer Response
Lack of acknowledgment of the PCN within 30 days constitutes acceptance of the change, Ref. JEDEC-J-STD-046.

To request further data or inquire about this notification, please contact your Silicon Labs sales representative. A list of Silicon Labs sales representatives is available at http://www.silabs.com.
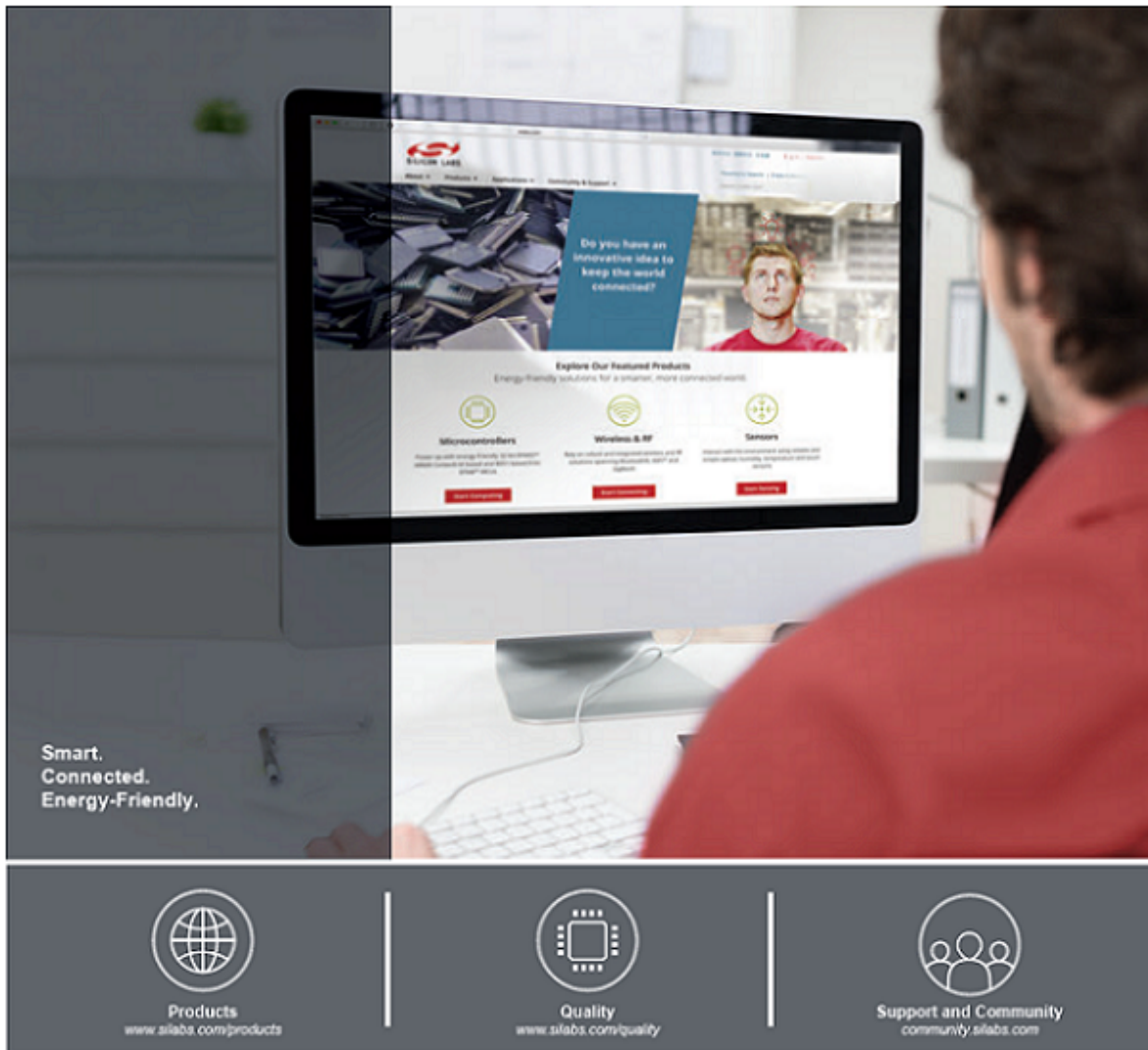
Customers may approve early PCN acceptance by emailing approval, along with PCN # to PCN@silabs.com

User Registration
Register today to create your account on Silabs.com. Your personalized profile allows you to receive technical document updates, new product announcements, "how-to" and design documents, product change notices (PCN) and other valuable content available only to registered users. **http://www.silabs.com/profile**

Qualification Data

N/A

Smart.
Connected.
Energy-Friendly.

Products
www.silabs.com/products

Quality
www.silabs.com/quality

Support and Community
community.silabs.com

Disclaimer

Silicon Labs intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use the Silicon Labs products. Characterization data, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications. Application examples described herein are for illustrative purposes only. Silicon Labs reserves the right to make changes without further notice and limitation to product information, specifications, and descriptions herein, and does not give warranties as to the accuracy or completeness of the included information. Silicon Labs shall have no liability for the consequences of use of the information supplied herein. This document does not imply or express copyright licenses granted hereunder to design or fabricate any integrated circuits. The products are not designed or authorized to be used within any Life Support System without the specific written consent of Silicon Labs. A "Life Support System" is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death. Silicon Labs products are not designed or authorized for military applications. Silicon Labs products shall under no circumstances be used in weapons of mass destruction including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons.

Trademark Information

Silicon Laboratories Inc.® , Silicon Laboratories®, Silicon Labs®, SiLabs® and the Silicon Labs logo®, Bluegiga®, Bluegiga Logo®, Clockbuilder®, CMEMS®, DSPLL®, EFM®, EFM32®, EFR, Ember®, Energy Micro, Energy Micro logo and combinations thereof, "the world's most energy friendly microcontrollers", Ember®, EZLink®, EZRadio®, EZRadioPRO®, Gecko®, ISOmodem®, Micrium, Precision32®, ProSLIC®, Simplicity Studio®, SiPHY®, Telegesis, the Telegesis Logo®, USBXpress®, Zentri and others are trademarks or registered trademarks of Silicon Labs. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. All other products or brand names mentioned herein are trademarks of their respective holders.

Silicon Laboratories Inc.
400 West Cesar Chavez
Austin, TX 78701

http://www.silabs.com