THREAD GROUP

NEW COMPONENT CERTIFICATION

General Candidate Product Information	
Product Name/Family/SKU	nRF52840 – nRF Connect SDK 2.5.0
Product Description	Advanced multi-protocol SoC supporting Thread / Zigbee / Bluetooth 5 / ANT / 2.4 GHz proprietary, built around a 32-bit ARM® Cortex™-M4F CPU with 1MB flash and 256kB RAM on chip
Hardware Version	Rev D
Software Version	nRF Connect SDK 2.5.0

Thread Certified Component Listing	
Member approves listing the certified component on threadgroup.org	☒ YES, at time of certification
	☐ YES, but DELAY listing until : *Click here to enter a date.*
	☐ No

Candidate Technical Details	
802.15.4 Chip Manufacturer/Model	Nordic Semiconductor nRF52840
Thread Stack Vendor	OpenThread
Thread Stack Vendor SDK Version	nRF Connect SDK 2.5.0
Stack Type	☒ OpenThread OT commit: 57ef721 ☐ Proprietary
Is the Candidate's Thread stack modified from the SDK?	☐ No
	☒ Yes
	IF Yes, enter a detailed summary of the changes: Support for nRF52840 platform, support for multi-protocol with BLE, support for security operations with nRF Oberon
	Mark ALL that apply:
	☒ Minimal Thread Device – MED (Minimal End Device) role
	☒ Minimal Thread Device – SED (Sleepy End Device) role
	☒ Minimal Thread Device – SSED (Synchronous Sleepy End Device) role

Candidate Technical Details

Thread device roles supported by the Candidate	☒ Full Thread Device [REED behavior] - Leader, Router, REED roles
	☒ Full Thread Device [FED behavior] – FED (Full End Device) role
	☐ Border Router
	☐ On-Mesh Commissioner
	☒ Thread Joiner **(required for Components, optional for End Products)**

Optional Feature Support	**Mark ALL that apply:** ☒ Joiner Application Provisioning in Joiner role ☒ DHCPv6 Agent ☒ DHCPv6 Client ☒ V1.2 : Link Metrics Initiator support ☐ V1.2 : Domain Unicast (DUA) support in Border Router role

Control method for testing the Candidate	☒ AutoDUT (via Thread Harness Control Interface [THCI]) ☐ Manual Describe the method to be used to onboard the DUT and issue commands: Click or tap here to enter text.

V1.3 REQUIREMENT **Is TLS/TCP support available for the component?**	☐ Yes
	If Yes, explain how/where TLS/TCP support is made available: Click or tap here to enter text.
	☒ No
	If No, note the following: **TLS/TCP support is mandatory for Thread V1.3 components.** A one-time waiver is available, expiring with V1.3.1 launch At the end of the waiver period, if the component is not compliant with the TLS/TCP support requirement, its certification will be suspended until the product is made compliant. **Enter your name below to accept the waiver and acknowledge intent to comply by V1.3.1 launch** Bartosz Pieńkowski

Statement of Thread Product Conformance

(Per V1.3 Thread Conformance Specification [20-Apr-2022])

All applicable requirements MUST be satisfied in order to grant certification.

Module/end product manufacturers should contact their Thread stack provider for assistance in completing this form.

Requirements for All Thread Devices		
Requirement	**Response**	
1) Does the Candidate prioritize Thread control messages over other messages? - MLE messages - Address Solicit Request and Address Solicit Response messages - Address Query and Address Notification messages - ICMPv6 Error messages	☒ Yes	☐ No
2) Does the Candidate store and communicate an Active Commissioning Dataset encoding size of up to 254 bytes? (MAX_ACTIVE_COMMISSIONING_DATASET_SIZE = 254)	☒ Yes	☐ No
3) Does the Candidate store and communicate a Pending Commissioning Dataset encoding size of up to 254 bytes? (MAX_PENDING_COMMISSIONING_DATASET_SIZE = 254)	☒ Yes	☐ No
4) Does the Candidate support storage and communication of a Thread Network Data encoding size up to 254 bytes?	☒ Yes	☐ No

Requirements for Router-Capable Devices		
Requirement	**Response**	
5) Enter the total # of Children (MED+SED/SSED+FED) supported by the Candidate in Router mode [minimum = 10, recommended = 64]	32	
6) Enter the total # of SED/SSED Children supported by the Candidate in Router mode [minimum = 6]	32	
7) Enter the # of IPv6 addresses supported by the Candidate in a MTD Child Address Set [minimum = 4]	6	
8) Enter the # of 1280-octet IPv6 datagrams that can be buffered by the Canddiate for an attached SED/SSED [minimum = 1]	1	
9) Enter the # of 106-octet IPv6 datagrams that can be buffered by the Candidate for each attached SED/SSED [minimum = 1]	1	
10) If the answer to (8) or (9) is greater than one (1): Does the Candidate in Router mode advertise its expanded SED/SSED buffer capacity in a MLE Parent Response message?	☐ Yes	☐ No
11) Does the Candidate ensure that any buffers guaranteed for a given SED/SSED are <u>solely used</u> for IPv6 datagrams that have an IPv6 Destination Address matching the SED/SSED's RLOC, its Link Local Address, one of the unicast or multicast addresses explicitly registered by the SED/SSED?	☒ Yes	☐ No
12) Enter the # of 6LoWPAN frames that can be buffered by the Candidate for forwarding to neighbors other than SED/SSEDs (i.e., other Routers, REEDs and MTDs) [minimum = 10]	16	
13) Must the Candidate reassemble IPv6 datagrams before forwarding to an MTD?	☒ Yes	☐ No
14) If YES, enter the # of 1280-octet IPv6 datagrams that can be buffered	1	
15) Does the Candidate implement a First In-First Out (FIFO) queue policy when forwarding to a SED/SSED?	☒ Yes	☐ No
16) Does the Candidate's FIFO queue policy prioritize Thread control messages?	☒ Yes	☐ No
17) V1.2 REQUIREMENT : Does the Candidate support being the Probing Subject of at least one active Link Metrics series (including Enhanced ACK and Forward Series) per attached **SED**?	☒ Yes	☐ No
18) Are ALL of the above Router mode resource requirements able to be supported by the Candidate simultaneously?	☒ Yes	☐ No

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Requirements for Thread Border Routers		
Requirement	**Response**	
19) Does the Candidate support inclusion of at least three (3) IPv6 prefixes, in addition to the Mesh-Local Prefix, in its own Server Data?	☒ Yes	☐ No
20) Does the Candidate support the storage of a Multicast Listeners Table of at least seventy-five (75) entries in memory?	☐ Yes	☒ No
21) If the Candidate supports DUA, does it support the storage of a DUA Devices Table of at least two hundred fifty (250) entries in memory?	☐ Yes	☒ No

THREAD CERTIFICATION TERMS AND CONDITIONS
V1.1
1-Jan-2020

Overview

The document describes the requirements to satisfy for a product or component to be certified by Thread Group. An authorized representative from your organization must accept the conditions of this agreement by clicking the Certification Terms and Conditions check box during the certification application process.

By completing the Thread Group certification application procedure, you acknowledge and agree to comply with Thread Group certification program requirements. Please keep a copy of this legal document for your records.

Requirements for Achieving Certification

To achieve certification of a product or component, members must meet the following requirements:

- The company must have an active Thread Group membership at an Implementer, Contributor or Sponsor level
    - The company's membership may not be suspended for any reason

- The member must be in good standing at the time of initial certification
    - All dues, fees and assessments which are payable to Thread Group must have been paid

- The candidate product or component must successfully complete Thread compliance and interoperability testing for all supported features at a Thread Group Authorized Test Laboratory (ATL) or inherit an existing Thread product certification.

Use of Thread Certification Logos

Use of Thread Certification logos are subject to your agreement to and compliance with the terms and conditions in the following documents:

- Thread Group Certification Mark License Agreement
- Thread Group Sponsor Member Agreement [for Sponsor members]
- Thread Group Contributor Member Agreement [for Contributor members]
- Thread Group Implementer Member Agreement [for Implementer members]
- Thread Group Brand and Messaging Guides

You may not use Thread certification logos on or in association with the candidate product or component until you have accepted the applicable agreements and have subsequently received notice that the certification has been issued for the product or component.

Requirements for Maintaining Certification

To maintain an existing certification, the member must comply with the requirements below. Failure to comply with any of these requirements at any time may result in the suspension or cancellation of the certification for all products or components.

- The company must maintain active Thread Group membership at a level which is eligible for Thread product or component certification.

- The member must remain in good standing at all times that it designates or promotes a certified product or component as Thread Certified.

- The member must remain in compliance with all Thread Group policies and regulations in effect from time to time. These policies and regulations are posted on the Thread Group website (www.threadgroup.org) and may be supplemented by communications that you receive from Thread Group.

- The "out-of-the-box" configuration for the certified product or component must remain the same as the configuration in which the product or component underwent certification testing

- The certification, once issued, applies only to the product or component identified by the certification identification number (CID)
  - o If you change the name, model or other identifying detail of the product or component, you must notify Thread Group and demonstrate to its satisfaction that no additional changes have been made to the product or component other than the identification change
  - o If any changes are made to the certified product or component that result in change in features, function or performance, the member must notify Thread Group and demonstrate to its satisfaction that the modified product or component continues to meet the specification compliance and interoperability requirements for certification. In many instances, this will require submission of the product or component to a Thread ATL for recertification testing.

Certification Scope

The certification for this product or component, once issued, is assigned to your company and applies only to units that are manufactured by your company directly or by others on your behalf and are sold, either directly or indirectly through one or more resellers. A third-party purchaser that purchases the product or component for private label and resale, or for modification and resale under any label, such as, for example, an OEM manufacturer, may not derive any rights or benefits from the product or component's certification unless the third-party becomes a member of Thread Group and, through its own independent certification application, demonstrates to the satisfaction of Thread Group that the relabeled product or component meets Thread Group's specification compliance and interoperability requirements. It is your obligation to inform such third party of this restriction and to direct it to contact Thread Group about satisfying the certification requirements.

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Elements of the Thread Group specifications may be subject to third party intellectual property rights, including without limitation, patent, copyright and trademark rights (such a third party may or may not be a member of Thread Group). Thread Group is not responsible and shall not be held responsible in any manner for identifying or failing to identify any or all such third party intellectual property rights.

Acknowledged and Agreed: Bartosz Pieńkowski
Date: 10/23/2023

END OF NEW COMPONENT CERTIFICATION APPLICATION