Wireless Device Technical Approval Notification - In Confidence

IT'S HOW WE CONNECT

Manufacturer	Nordic Semiconductor
Model	nRF9160-SICA
Market Name	nRF9160-SICA
Device Type	Embedded Module
Nature of Approval	Maintenance Release
Status	Full Approval
Conditional item	None
Software detail	mfw_nrf9160_1.3.1
OS detail	Not Applicable
4G Network	Supported
3G Network	Not Supported
2G Network	Not Supported
Roaming	Supports Roaming to Europe and Americas. (Not tested as M2M devices not expected to roam)
Approval Re-assessment Date	1 March 2024
Main Device Strengths and Key Features	None
Main Device Weaknesses	None

Date	2 March 2022
To	Rebecca Haagsma -Telstra Jouni Korhonen – Nordic Semiconductor
CC	Joan, Jacob – IoT Technology and Devices
From	Nesa Packianathan Networks Engineering | Domain Engineering | Testing & Device Accreditation Address: Level 2, 91 Marsden St | Parramatta NSW 2150 | Australia Mobile: +61 412 308 796; Facsimile: +61 298 654 709 (Insert 0 for +61 within Australia)

MAINTENANCE RELEASE DETAILS

Purpose	The Main purpose of this Maintenance release is to incorporate bug fixes and enabling NB2. For detailed information refer to release notes under "Reports and Document's" section.
New Issues Identified in MR	None
End user upgrade procedure	Integrating product dependent

SOFTWARE INFORMATION

Device Software	mfw_nrf9160_1.3.1
Software Interrogation Sequence	Using AT Command (ATI)
TAC	35265610
Locked to Telstra Network	No
SVN	22

HARDWARE INFORMATION

HARDWARE Version of Engineering Sample	nRF9160-SICA-B0A, nRF9160-SICA-B1A
HARDWARE Version of production Sample	nRF9160-SICA-B0A, nRF9160-SICA-B1A
Hardware Interrogation Sequence	Using AT Command (AT%HWVERSION)

RF PLATFORM

Chipset	nRF9120- CCAAB00
Chipset Firmware Version	mfw_nrf9160_1.3.1
Application Processor	ARM Cortex-M33
Application Processor Firmware Version	NCS SDK version 1.8.0 the Zephyr RTOS uses v2.7.99 (Depends on end customer)
RF Platform Used/Radio processor models	Integrated transceiver in nRF9120- CCAAB00
Flash Chipset Type and Size	Integrated 1MB and 256kB SRAM for application processor

ANTENNA

Is this device a Blue tick?	There will not be a Data Device coverage performance rating.
External RF connection	To be determined by product integrating the module

RADIO TECHNOLOGY SUPPORT

eMTC	
Category	CAT M1
Duplex Operation Mode	Half Duplex
Coverage Enhancement Support	Yes (CE Mode A)
Connected Mode Mobility (CMM)	Yes
Power Saving Mode (PSM)	Yes (Disabled by default)
Extended Discontinuous Reception (eDRX)	Yes (Disabled by default)
NB -IOT	
Category	CAT NB2
Power Saving Mode (PSM)	Yes (Disabled by default)
Extended Discontinuous Reception (eDRX)	Yes (Disabled by default)
Release Assistance Indication (RAI)	Yes (Disabled by default)
2 HARQ Process	Yes (Disabled by default)
CIoT Control Plane Optimisation	Yes
CIoT User Plane Optimisation	No

BAND SUPPORT

4G Network	Band 3(1800), Band 28(700)
3G Network	Not applicable
2G Network	Not applicable

DATA THROUGHPUT CATEGORY

4G Network	CAT M1- Half Duplex (DL - 375 Kbps, UL - 375 Kbps) * CAT NB2 (DL - 80 Kbps, UL – 105 Kbps) *
3G Network	Not applicable

* Speed mentioned is network peak theoretical throughput

POWER CLASS

Power Class UMTS 850/ 2100	Not applicable
Power Class LTE 700/850/900/1800	3

AUDIO CODEC SUPPORTED

EFR	No
HR	No
AMR	No
AMR-WB	No
EVS	No

CONNECTIVITY

NFC	No
Wi-Fi	No
Bluetooth	No
DLNA	No

EXTRA FEATURE

External Memory	No
3G VOICE	No
4G Voice (VoLTE and E000 Call)	No
VoWiFi	No
Telstra Messaging (RCS)	No
4G Video calling (ViLTE)	No
SMS-MT	Yes
SMS-MO	Yes
MMS	No
GPS	No
AGPS	No
PAP	Yes
CHAP	Yes
USIM-OTAC	Yes
Single Stack IPv6	Yes
Dual Stack IPv4v6	Yes
Single Stack IPv6 Tethering/Wi-Fi hotspot	No
Dual Stack IPv4V6 Tethering/Wi-Fi hotspot	No
Roaming PDN/PDP Type Option	No
Device OTAC	No
USIM Variant	Integrating product dependent
SIM Toolkit	Yes
BIP	Yes
FOTA	Yes (Remote upgrade possible via proprietary procedure)
Simultaneous PDP	No
Multiple RAB Support	No

REPORTS AND DOCUMENTS

Vendor provided documents

SAR	Not Applicable
SDoC	The Vendor has provided the SDoC report (Report attached below). Note that the vendor is responsible for the content of this report (and not Telstra) nRF9160_Australia_59965.pdf [nRF9160_Australia_59965.pdf]
Hardware declaration document	additional_documentation.xlsx [additional_documentation.xlsx]
GCF/ PTCRB	GCF-CC 3.83.0 "NB2 and 2 HARQ conformance reports are from Nordic's in house test setup. Formal GCF results failed due to in-compatibility with AccessStratumRelease indicator."
Additional Device Specification	nRF91_DK_User_Guide_v0.7.2.pdf [nRF91_DK_User_Guide_v0.7.2.pdf]
Vendor Customisation File	Nordic_nrf9160_pri.xlsx [Nordic_nrf9160_Customisation file.xslx]
Release Notes	**mfw_nrf9160_1.3.1_release_notes_final.** [mfw_nrf9160_1.3.1_release_notes_final.txt]

TELSTRA documents

Pre-configuration Document	MSR0295_v71
Customisation Document	Not applicable
Issues Register	Nordic semiconductor_nRF [Nordic Semiconductor_nRF9160-SICA _issue register .xlsx]

ENDORSEMENT AND SIGN OFF

Domain Engineering

| Domain Engineering Chapter | Nesa Packianathan for | **Chapter Lead –** Testing & Device Accreditation |
| | Sinthu Sri Ganeshwaran | **Chapter Area Lead –** Domain Engineering |

CONDITIONS OF APPROVAL

- Approval is provided based on the hardware and software variants submitted to, tested by and technically approved by Telstra.
- Any changes to hardware and software are to be formally submitted to Telstra in writing prior to implementation so Telstra can evaluate and/or validate the impact of the change/s
- Approval is given on basis that future software upgrades will have updated SVN values.
- Compatibility status is given on tests performed, manufacturers declaration of compliance and change information on existing compatible product.
- Data devices Approval status will be reassessed two (2) years after initial Telstra Technical Approval.
    - Re-assessment Date: 1 March 2024

Nordic to address the following issue in the Next Maintenance Release.

All issues have an acceptance from Telstra Retail/ Products.

Condition No	Issue No	Issue description	End Customer / Network Impact
		Outstanding class 3 issues in issues register should be addressed in future releases or products	

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