GTI NB-IoT Chipset Certification Report

GTI

Version:	V1.0.0
Deliverable Type	□ Procedural Document ☒ Working Document
Confidential Level	☒ Open to GTI Operator Members □ Open to GTI Partners □ Open to Public
Working Group	Terminal WG
Task	PM3-PJ5: IoT Program / Device Certification Project
Source members	
Support members	
Editor	GTI Certification Office
Last Edit Date	2018-XX-XX
Approval Date	

1 Overview

The certification Report specifies a synthetic assessment for NB-IoT product. The assessment includes conformance, network compatibility, Tx/Rx power, RF accuracy and power consumption. The document is for industrial reference.

2 Product Information

GENERAL INFORMATION		
1	Product Manufacturer	
2	Product TYPE(CHIPSET/MODULE/DEVICE)	
3	Product identifier (Model Name or Number)	
4	Hardware Version	
5	Software Version	
6	Primary Function Description (NB-IoT/eMTC)	
7	Certified Band	

3 Certification Result

The test results of DUT in protocol & RF conformance, network compatibility, TX/RX performance and power consumption demonstrate that the product is GTI certified.

3.1 Protocol Conformance Test

Table 3-1 Protocol Conformance Test Result

Item	Available cases	Executed cases	Test Results
Category "M"			
Category "O"			

3.2 RF Conformance Test

Table 3-2 Protocol Conformance Test Result

Item	Available cases	Executed cases	Test Results
Category "M"			
Category "O"			

3.3 RRM Conformance Test

Table 3-3 RRM Conformance Test Result

Item	Available cases	Executed cases	Test Results
Category "M"			
Category "O"			

3.4 Network Compatibility Test

3.4.1 Operating Mode

Table 3-4 Operating Mode

	Huawei	ZTE	Ericsson	Nokia	DATANG
Stand-alone					
In-Band					
Guard Band					

3.4.2 Uplink and Downlink Subcarrier Spacing

Table 3-5 Uplink and Downlink Subcarrier Spacing

	Huawei	ZTE	Ericsson	Nokia	DATANG
UL 3.75kHz ST					
UL 15kHz ST					
UL 15kHz MT					
DL 15kHz					

3.4.3 Paging

Table 3-6 Paging

	Huawei	ZTE	Ericsson	Nokia	DATANG
Paging					

3.4.4 Short Message Service

Table3-7 SMS

	Huawei	ZTE	Ericsson	Nokia	DATANG
Short Message Service(SMS)					

3.4.5 Data Transmission

Table 3-8 Data Transmission

	Huawei	ZTE	Ericsson	Nokia	DATANG
Control Plane					
User Plane					

3.4.6 Transfer Protocol

Table 3-9 Transfer Protocol

	Huawei	ZTE	Ericsson	Nokia	DATANG
IP					
NoN-IP					

3.4.7 Power Saving Function

Table 3-10 Power Saving Function

	Huawei	ZTE	Ericsson	Nokia	DATANG
PSM					
eDRX					

3.4.8 Mobility Function

Table 3-11 Mobility Function

Cell Reselection					

3.4.9 Rate Performance (R13)

4

Table 3-12 Peak Rate(Unit: kbps)

	MCL≤144dB		MCL=154dB		MCL=164dB	
	UL	**DL**	**UL**	**DL**	**UL**	**DL**
Huawei						
ZTE						
Ericsson						
Nokia						
DATANG						

3.5 RF Performance Test

Note: Category "C" Test Cases. Up to manufacture to decide whether release test results in this Part

3.5.1 Maximum Transmitting Power

Table 3-13 Maximum Transmitting Power Test Result

No	Cell Parameter NRS EPRE (dBm/15KHz)	Test Result（dBm）
1	-88	
2	-112	
3	-132	

3.5.2 RX Sensitivity

The DUT **meets** the RX Sensitivity requirement (MCL≥164dB) in Standalone/Guardband mode.

Note: the Rx sensitivity requirements for category-NB UE is -121dBm/200kHz in standalone/Guardband mode and -129dBm/200kHz in In-band mode.

3.5.3 Measurement Accuracy Test

(1). Test Results in Ideal Environment

Table 3-14 NRSRP accuracy in Ideal Environment

Expected RF Measurement Value	Accuracy Biases
-88dBm	
-112dBm	

-132dBm	

(2). RF Measurement Accuracy Test in AWGN Environment

Table 3-15 NRSRP accuracy in AWGN environment

SNR Expected Value	Accuracy Biases			
	20dB	10dB	0dB	-5dB
-88dBm				
-112dBm				
-132dBm				

Table 3-16 SNR accuracy in AWGN environment

Expected Value NRS EPRE	Accuracy Biases			
	20dB	10dB	0dB	-5dB
-88dBm				
-112dBm	NA			

(3) RF Measurement Accuracy Test in Interference Environment

Table 3-17 NRSRP accuracy in Interference environment

SNR Expected Value	Accuracy Biases			
	20dB	10dB	0dB	-5dB
-88dBm				
-112dBm				
-132dBm	NA	NA	-0.8	

3.6 Power Consumption Test

Note: Category "C" Test Cases. Up to manufacture to decide whether release test results in this Part

Table 3-18 Certification Results of Power Consumption

Status	Result
PSM	
IDLE (Paging Cycle=2.56s)	
eDRX cycle（20.48s）	

eDRX cycle（81.92s）		
eDRX cycle（655.36s）		
Average Current during Registration		
Duration of Registration		
Data transfer	0dB TX Power	
	Max TX Power	
Data receive		

4 Document Change Record

Date	Version	Change History
XXXX-XX-XX	1.0.0	Initial Version

The last page