

# **GTI NB-IoT Communication Module Certification Report**

The GTI logo is positioned at the bottom center of the page. It consists of the letters 'GTI' in a bold, white, sans-serif font. The logo is set against a dark blue background that features a complex, glowing grid pattern of concentric circles and intersecting lines, creating a sense of depth and technology. A bright light source is visible in the center of the grid, casting a glow across the entire lower half of the image.

**GTI**

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# GTI

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# 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)	MODULE
3	Product identifier (Model Name or Number)	
4	Hardware Version	
5	Software Version	
6	Primary Function Description (NB-IoT/eMTC/...)	NB-IoT
7	Chipset Manufacturer	
8	Chipset Model Name or Number	
9	Chipset Software Version	
10	Chipset Hardware Version	
11	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

Refer to the section 3.1 Protocol Conformance Test in certification report for XXX XXXX

### 3.2 RF Conformance Test

Table 3-1 RF Conformance Test Result

Item	Available cases	Executed cases	Test Results
Category "M"	77		
Category "O"	27		

### 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

Refer to the section 3.4.1 Operating Mode in certification report for XXX XXXX

#### 3.4.2 Uplink and Downlink Subcarrier Spacing

Refer to the section 3.4.2 Uplink and Downlink Subcarrier Spacing in certification report for XXX XXXX

#### 3.4.3 Paging

Refer to the section 3.4.3 Paging in certification report for XXX XXXX

#### 3.4.4 Short Message Service

Refer to the section 3.4.4 Short Message Service in certification report for XXX XXXX

#### 3.4.5 Data Transmission

Refer to the section 3.4.5 Data Transmission in certification report for XXX XXXX

#### 3.4.6 Transfer Protocol

Refer to the section 3.4.6 Transfer Protocol in certification report for XXX XXXX

#### 3.4.7 Power Saving Function

Refer to the section 3.4.7 Power Saving Function in certification report for MTK MT2625

### 3.4.8 Mobility Function

Refer to the section 3.4.8 Mobility Function in certification report for XXX XXXX

### 3.4.9 Rate Performance ( R13 )

Table 3-4 Peak Rate (UL 15kHz ST, Unit:kbps)

Network Vendor	MCL≤144dB		MCL=154dB		MCL=164dB	
	UL	DL	UL	DL	UL	DL
HUAWEI						

## 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 3-5 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 ( $MCL \geq 164\text{dB}$ ) 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 3-6 NRSRP accuracy in Ideal Environment

Expected RF Measurement Value	Accuracy Biases
-88dBm	
-112dBm	
-132dBm	

**(2) RF Measurement Accuracy Test in AWGN Environment**

Table 3-7 NRSRP accuracy in AWGN environment

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

Table 3-8 SINR 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 3-9 NRSRP accuracy in Interference environment

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

**3.6 Power Consumption Test**

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

Table 3-10 Certification Results of Power Consumption

Status		Average Current
PSM		
Idle		
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

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