

9.2. FCC Certificate (USA)

BLE 1Mbps & 2Mbps, IEEE 802.15.4 approved.



TCB

**GRANT OF EQUIPMENT
AUTHORIZATION**

Certification

Issued Under the Authority of the
Federal Communications Commission

By:

TCB

Raytac Corp.
5F., No.3, Jiankang Rd., Zhonghe Dist.,
New Taipei City,, 23586
Taiwan

Attention: Venson Liao , R&D Manager

Telefication B.V.
Edisonstraat 12a
Zevenaar, NL-6902 PK
Netherlands

Date of Grant: 07/26/2018

Application
Dated: 07/25/2018

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission's Rules and Regulations listed below.

<p>FCC IDENTIFIER: Name of Grantee: Equipment Class: Notes: Modular Type:</p>	<p>SH6MDBT50Q Raytac Corp. Digital Transmission System Bluetooth Low Energy & IEEE 802.15.4 Combo Module Single Modular</p>
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Grant Notes	FCC Rule Parts	Frequency Range (MHZ)	Output Watts	Frequency Emission Tolerance Designator
	15C	2402.0 - 2480.0	0.0066	
	15C	2405.0 - 2480.0	0.0066	

Modular Approval. This is a portable device. Power Output is conducted. This grant is valid only when the module is sold to OEM integrators and must be installed by the OEM or OEM integrators. End-users may not be provided with the module installation instructions. OEM integrators and end-users must be provided with transmitter operating conditions for satisfying RF exposure compliance.





Certificate No.:
182180940/AA/00

Ramy Nabod
Product Assessor



9.3. TELEC Certificate (Japan)

BLE 1 Mbps & 2 Mbps

	<i>Certificate Technical Support Center Co., Ltd.</i> <i>RAB ID No. 018</i>
Construction Type Certification	
Registration No.	CSRT180280-1
Certificate Holder	Raytac Corporation 5F, No.3, Jiankang Rd., Zhonghe Dist., New Taipei City, 235, Taiwan
Product Category	Article 2, Paragraph 1, Item 19
Model Type or Name	MDBT50Q, MDBT50Q-1M, MDBT50Q-P1M, MDBT50Q-U1M, MDBT50Q-P, MDBT50Q-U
Type of Emission, Frequency and Antenna Power	F1D 2402MHz - 2480MHz (2MHz separation, 40 channels) 5.9704mW, 5.0816mW
Manufacturer	Raytac Corporation 5F, No.3, Jiankang Rd., Zhonghe Dist., New Taipei City, 235, Taiwan
Factory	Tech-Lin's Electronics Corp. 5F/11F, No. 778, Zhongzheng Rd., Zhonghe Dist., New Taipei City 23586, Taiwan R.O.C
Remarks	The scope of evaluation relates to the submitted documents and product only. It is only valid in conjunction with the Annex.
When the product is placed on the Japanese market, the Specified Radio Equipment marking as shown on the right must be attached on visible part of the product.	 R 018-180280
Witnesses that the certification is on Construction Type Certification under Article 38-24 of the Radio Law.	
Date of Certificate 2018/7/30	 Certification Examiner : Takuji Nakano  C&S Certificate Technical Support Center Co., Ltd.
Address: 610- 1 Kishine-cho, Kohoku-ku, Yokohama-City, 222-0034 Japan Tel.: +81 45 594 9185 • Fax: +81 45 594 9183 • E-mail: cert@cns-web.co.jp	

IEEE 802.15.4



Certificate Technical Support Center Co.,Ltd:
RAB ID No. 018

Construction Type Certification

Registration No.	CSRT180280-1
Certificate Holder	Raytac Corporation 5F, No.3, Jiankang Rd., Zhonghe Dist., New Taipei City, 235, Taiwan
Product Category	Article 2, Paragraph 1, Item 19
Model Type or Name	MDBT50Q, MDBT50Q-1M, MDBT50Q-P1M, MDBT50Q-U1M, MDBT50Q-P, MDBT50Q-U
Type of Emission, Frequency and Antenna Power	G1D 2405MHz - 2480MHz (5MHz separation, 16 channels) 3.539mW/MHz
Manufacturer	Raytac Corporation 5F, No.3, Jiankang Rd., Zhonghe Dist., New Taipei City, 235, Taiwan
Factory	Tech-Lin's Electronics Corp. 5F/11F, No. 778, Zhongzheng Rd., Zhonghe Dist., New Taipei City 23586, Taiwan R.O.C
Remarks	The scope of evaluation relates to the submitted documents and product only. It is only valid in conjunction with the Annex.

When the product is placed on the Japanese market, the Specified Radio Equipment marking as shown on the right must be attached on visible part of the product.



R 018-180280

Witnesses that the certification is on Construction Type Certification under Article 38-24 of the Radio Law.

Date of Certificate
2018/7/30

Takuji Nakano

Certification Examiner : Takuji Nakano
C&S Certificate Technical Support Center Co., Ltd.



Address: 610-1 Kishine-cho, Kohoku-ku, Yokohama-City, 222-0034 Japan
Tel: +81 45 594 9185 • Fax: +81 45 594 9183 • E-mail: cert@cns-web.co.jp

9.4. NCC Certificate (Taiwan)

BLE 1Mbps & 2Mbps, IEEE 802.15.4 approved.

MDBT50Q

	台灣檢驗科技股份有限公司 電信管制射頻器材型式認證證明
一、申請者：	勁達國際電子有限公司
二、地址：	235 新北市中和區建康路3號5樓
三、製造廠商：	勁達國際電子有限公司
四、器材名稱：	低功耗藍牙及 IEEE 802.15.4 整合模組
五、廠牌：	Raytac
六、型號：	MDBT50Q
七、發射功率 (電場強度)：	BT V5.0 single mode LE (GFSK): 8.19dBm (Peak) BT single mode LE (GFSK): 8.03dBm (Peak) Zigbee(O-QPSK): 8.18dBm (Peak)
八、工作頻率：	BT V5.0 single mode LE (GFSK): 2402-2480MHz Zigbee(O-QPSK): 2405-2480MHz
九、審驗日期：	107年7月30日
十、審驗合格標籤式樣：	
十一、警語或標示要求：	<ol style="list-style-type: none">應依審驗合格標籤或符合性聲明標籤或樣自製標籤黏貼或印鑄於電信管制射頻器材本體明顯處，並於包裝盒標示本會標章，始得開陳列或販賣。電信管制射頻器材應依本會或相關技術規範規定於指定位置標示中文警語。經授權使用射頻模組(組件)之審驗合格標籤者，應於最終產品說明書及包裝盒提供充分與正確之資訊。於網際網路販賣取得審驗證明之電信管制射頻器材者，應於該網際網路網頁提供審驗合格標籤或符合性聲明標籤資訊。使用手冊應標示下列資訊： (1)經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。
十二、特殊記載事項：	<ol style="list-style-type: none">經取得審驗證明之電信管制射頻器材，如變更其廠牌、型號、技術規格或射頻性能時，除電信管制射頻器材審驗辦法另有規定外，應重新申請審驗。經取得審驗證明之電信管制射頻器材或射頻模組(組件)，於電信管制射頻器材相關技術規範修訂審驗相關章節時，應依下列規定辦理： (1)修訂後之技術規範明定實施期限者，依實施期限，申請重新審驗。 (2)修訂後之技術規範未明定實施期限者，應於技術規範修訂後二年內，申請重新審驗。經取得審驗證明之電信管制射頻器材，於電信管制射頻器材相關技術規範修訂審驗相關章節時，修訂後之技術規範未明定實施期限者，應於技術規範修訂後二年內，申請重新審驗。未依規定重新審驗者，原驗證機關(構)得廢止其審驗證明。取得型式認證證明、符合性聲明證明及簡易符合性聲明證明者，應妥善保管申請審驗器材樣品、測試所需之特殊測試軟體及特殊治具至該器材停止生產或停止輸入後五年。取得型式認證證明或符合性聲明證明者授權他人於同廠牌同型號之電信管制射頻器材或射頻模組(組件)使用審驗合格標籤或符合性聲明標籤，應由取得審驗證明者於本會指定位置登錄。以取得審驗證明之射頻模組(組件)組裝於最終產品後，取得審驗證明者，應於該最終產品輸入、販賣或公開陳列前，檢具標註最終產品廠牌、型號及外觀照片之電子檔，向原驗證機關(構)登錄；以射頻模組(組件)取得審驗證明者，授權他人使用其審驗合格標籤，該射頻模組(組件)組裝於最終產品後，取得審驗證明者應檢具標註最終產品廠牌、型號及外觀照片之電子檔，向原驗證機關(構)登錄。本案審驗模組為完全模組，適用於任何平臺。「平臺」指不組裝射頻模組(組件)，仍具備該平臺主要功能之器材。
說明：	<ol style="list-style-type: none">本公司/中心係經國家通訊傳播委員會委託之驗證機構(證書號碼：NCC-RCB-13，機構地址：新北市五股區新北產業園區五工路134號，電話：02-2299 3279)，核發本型式認證證明。請依上列標籤式樣自製標籤，黏貼或印鑄於器材本體明顯處，始得販賣或公開陳列。本設備之製造、輸入、販賣、使用等均需遵守相關電信法規之規定。
備註：	<ol style="list-style-type: none">本器材符合低功率射頻電機技術規範(3.10.1)之規定。本公司僅對無線射頻特性技術規範辦理型式認證，其他仍須依本國相關法規辦理。本器材使用天線型態： Clip Antenna，天線廠牌：Raytac，Model No.: MDBT50Q，增益：-0.65dBi。本公司係經國家通訊傳播委員會委託之驗證機構，核發本型式認證證明。

MDBT50Q-P

SGS

台灣檢驗科技股份有限公司
電信管制射頻器材型式認證證明

- 一、申請者：勁達國際電子有限公司
- 二、地址：臺北市大安區和平東路1段145號5樓之1
- 三、製造廠商：勁達國際電子有限公司
- 四、器材名稱：低功耗藍牙及 IEEE 802.15.4 整合模組
- 五、廠牌：Raytac
- 六、型號：MDBT50Q-P
- 七、發射功率(電場強度)：詳細射頻規格如備註欄
- 八、工作頻率：詳細射頻規格如備註欄
- 九、審驗日期：108年10月24日

- 十、審驗合格標籤式樣：



- 十一、警語或標示要求：(器材本體、使用手冊、外包裝盒等應遵守下列標示要求)
1. 應依審驗合格標籤或符合性聲明標籤式樣自製標籤黏貼或印鑄於電信管制射頻器材本體明顯處，並於包裝盒標示本會標章，始得開陳列或販賣。
 2. 電信管制射頻器材應依本會或相關技術規範規定於指定位置標示中文警語。
 3. 經授權使用射頻模組(組件)之審驗合格標籤者，應於最終產品說明書及包裝盒提供充分與正確之資訊。
 4. 於網際網路販賣取得審驗證明之電信管制射頻器材者，應於該網際網路網頁提供審驗合格標籤或符合性聲明標籤資訊。
 5. 使用手冊應標示下列資訊：
(1)經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。
 6. 本器材之審驗範圍僅限無線射頻硬體功能，不及於器材之資通安全檢測。

9.5. CE (EU) & RCM (Australia & New Zealand) Test Report

BLE 1 Mbps & 2 Mbps

	Report No.: E2/2018/50088-02 Page: 1 of 73
RED (2014/53/EU) ETSI EN 300 328 v2.2.2 : 2019 & Australian/New Zealand Standard AS/NZS 4268:2017 TEST REPORT	
FOR	
Applicant:	Raytac Corporation 5F, No.3, Jiankang Rd., Zhonghe Dist., New Taipei City, 235, Taiwan
Product Name:	Bluetooth Low Energy & IEEE 802.15.4 Combo Module
Brand Name:	Raytac
Model No.:	MDBT50Q, MDBT50Q-P, MDBT50Q-U
Model Difference:	Different Antenna Type
Report Number:	E2/2018/50088-02
Issue Date:	Jun. 15, 2020
Date of Test:	May 31, 2018 ~ Jun. 28, 2018 (Original test), Jun. 05, 2020 (Update receiver blocking)
Date of EUT Received:	May 31, 2018 (Original test), Apr. 16, 2020 (Update receiver blocking)
We hereby certify that: The above equipment was tested by SGS Taiwan Ltd., Central RF Lab for compliance with the requirements set forth in the European Standard ETSI EN 300 328 v2.2.2: 2019 under RED 2014/53/EU and Australian/New Zealand Standard AS/NZS 4268:2017, Row 59. Test report to determine compliance with AS/NZS 4268 requirements. The results of testing in this report apply to the product system that was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.	
Approved By:	 <u>Jay Lin / Asst. Supervisor</u>
	 



**RED (2014/53/EU) ETSI EN 300 328 v2.2.2 : 2019
&
Australian/New Zealand Standard AS/NZS 4268:2017
TEST REPORT**

FOR

Applicant: Raytac Corporation
5F, No.3, Jiankang Rd., Zhonghe Dist., New Taipei City, 235,
Taiwan

Product Name: Bluetooth Low Energy & IEEE 802.15.4 Combo Module

Brand Name: Raytac

Model No.: MDBT50Q, MDBT50Q-P, MDBT50Q-U

Model Difference: Different Antenna Type

Report Number: E2/2018/50089-02

Issue Date: Jun. 11, 2020

Date of Test: May 31, 2018 ~ Jul. 23, 2018 (Original test),
Jun. 08, 2020 (Update receiver blocking)

Date of EUT Received: May 31, 2018 (Original test),
Apr. 16, 2020 (Update receiver blocking)

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd., Central RF Lab for compliance with the requirements set forth in the European Standard ETSI EN 300 328 v2.2.2: 2019 under RED 2014/53/EU and Australian/New Zealand Standard AS/NZS 4268:2017. Test report to determine compliance with AS/NZS 4268 requirements. The results of testing in this report apply to the product system that was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved By:

Jay Lin

Jay Lin / Asst. Supervisor



VERIFICATION OF EMC COMPLIANCE

Verification No.	: MH/2018/60113C-01
Representative Model No.	: MDBT50Q
Added Model(s)	: MDBT50Q-P, MDBT50Q-U
Product Name	: Bluetooth Low Energy & IEEE 802.15.4 Combo Module
Brand Name	: Raytac
Applicant	: Raytac Corporation
Address of Applicant	: 5F, No.3, Jiankang Rd., Zhonghe Dist., New Taipei City, 235, Taiwan
Test Report Number	: MH/2018/60113-01
Date of Issue	: Oct. 02, 2019
Applicable Standards	: EN 301 489 –1 v2.2.0 : 2017-03 (Draft) EN 301 489 –17 v3.2.0 : 2017-03 (Draft) EN 55032 : 2015+AC:2016-07 EN 61000-4-2 : 2009, EN 61000-4-3 : 2006+A1:2008+A2:2010

Conclusion

Please be noted that the VERIFICATION MH/2018/60113C-01 will replace the previous MH/2018/60113C as the new version. Also be pay attention that MH/2018/60113C is ineffective anymore from now on.

The apparatus meets the requirements of the above standards and hence compliance the essential requirements under article 3.1b of the RED (2014/53/EU) Directive.

*This verification is only valid for the equipment and configuration described, and in conjunction with the test report as detailed above.




Authorized Signatory:



SGS TAIWAN LTD.
Eddy Cheng
Technical Asst. Supervisor

9.6. IC Certificate (Canada)

BLE 1Mbps & 2Mbps, IEEE 802.15.4 approved.

telefication bv The Netherlands Chamber of Commerce 51565536 www.telefication.com				
TECHNICAL ACCEPTANCE CERTIFICATE		CERTIFICAT D'ACCEPTABILITÉ TECHNIQUE		
CERTIFICATION No. No. DE CERTIFICATION	8017A-MDBT50Q			
TELEFICATION No. No. DE TELEFICATION	192170353/AA/00			
TEST SITE No. No. DE LABORATOIRE	4620A			
ISSUED TO DELIVRÉ A	Raytac Corporation			
TYPE OF EQUIPMENT GENRE DE MATERIEL	Bluetooth device Spread Spectrum/Digital Device (2400-2483.5 MHz)			
TRADE NAME AND MODEL MARQUE ET MODELE	Raytac / MDBT50Q Raytac / MDBT50Q-1M Raytac / MDBT50Q-P1M Raytac / MDBT50Q-P			
CERTIFIED TO CERTIFIÉ SELON LE	SPECIFICATION CAHIER DES CHARGES	RSS-102 RSS-247	ISSUE EDITION	5 2
<p>Certification of equipment means only that the equipment has met the requirements of the above-noted specification. Licence applications, where applicable to use certified equipment, are acted on accordingly by the ISDE issuing office and will depend on the existing radio environment, service and location of operation. This certificate is issued on condition that the holder complies and will continue to comply with the requirements and procedures issued by ISDE. The equipment for which this certificate is issued shall not be manufactured, imported, distributed, leased, offered for sale or sold unless the equipment complies with the applicable technical specifications and procedures issued by ISDE.</p>		<p>La certification du matériel signifie seulement que le matériel a satisfait aux exigences de la norme indiquée ci-dessus. Les demandes de licences nécessaires pour l'utilisation du matériel certifié sont traitées en conséquence par le bureau de délivrance d'ISDE et dépendent des conditions radio ambiantes, du service et de l'emplacement d'exploitation. Le présent certificat est délivré à la condition que le titulaire satisfasse et continue de satisfaire aux exigences et aux procédures d'ISDE. Le matériel à l'égard duquel le présent certificat est délivré ne doit pas être fabriqué, importé, distribué, loué, mis en vente ou vendu à moins d'être conforme aux procédures et aux spécifications techniques applicables publiées par ISDE.</p>		
ISSUED BY TELEFICATION BV (NL0001), RECOGNIZED CERTIFICATION BODY BY INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA DELIVRÉ PAR TELEFICATION BV (NL0001), ORGANISME DE CERTIFICATION RECONNU PAR INNOVATION, SCIENCES ET DEVELOPPEMENT ECONOMIQUE CANADA				
<i>I hereby attest that the subject equipment was tested and found in compliance with the above-noted specification. J'atteste, par la présente, que le matériel a fait l'objet d'essai et a été jugé conforme à la spécification ci-dessus</i>				
DATE 25 Oct 2019 BY	Gürhan Vural Product Assessor			
This certificate has one annex.				

9.7. SRRC Certificate (China)

BLE 1Mbps & 2Mbps, IEEE 802.15.4 approved.



9.8. KC Certificate (South Korea)

BLE 1Mbps & 2Mbps, IEEE 802.15.4 approved.



2CC6-E6D4-B6AA-9E64

방송통신기자재등의 적합인증서 <i>Certificate of Broadcasting and Communication Equipments</i>	
상호 또는 성명 <i>Trade Name or Applicant</i>	Raytac Corporation
기자재명칭(명칭) <i>Equipment Name</i>	특정소출력 무선기기(무선데이터통신시스템용 무선기기)
기본모델명 <i>Basic Model Number</i>	MDBT50Q-U
파생모델명 <i>Series Model Number</i>	MDBT50Q, MDBT50Q-P
인증번호 <i>Certification No.</i>	R-C-ryt-MDBT50Q
제조사/제조국가 <i>Manufacturer/ Country of Origin</i>	Raytac Corporation / 대만
인증연월일 <i>Date of Certification</i>	2018-08-17
기타 <i>Others</i>	
<p>위 기자재는 「전파법」 제58조의2 제2항에 따라 인증되었음을 증명합니다. It is verified that foregoing equipment has been certificated under the Clause 2, Article 58-2 of Radio Waves Act.</p> <p style="text-align: right;">2018년(Year) 08월(Month) 17일(Day)</p> <p style="text-align: center;">국립전파연구원장 </p> <p style="text-align: center;"><i>Director General of National Radio Research Agency</i></p> <p style="text-align: center; font-size: small;">* 인증 받은 방송통신기자재는 반드시 "적합성평가표시" 를 부착하여 유통하여야 합니다. 위반시 과태료 처분 및 인증이 취소될 수 있습니다.</p>	

9.9. WPC (ETA) Certificate (India)

BLE 1Mbps & 2Mbps, IEEE 802.15.4 approved.

MDBT50Q

 Government of India Ministry of Communications & IT Department of Telecommunications, Wireless Planning and Coordination Wing RLO SR, IMS CAMPUS, PERUNGUDI, CHENNAI - 600 096		
FileNo. J-22022/01/2017-RLO(SR) 6476	Date 22-10-2018	
ETA Certificate No: ETA - 1323/2017-RLO(SR) On-Line ID 2018118031		
Equipment Type Approval is hereby granted for under mentioned equipment for operation with following parameters/conditions:		
I. Details of Applicant and parameters of Equipment:		
1. Name and address of the Applicant	Atoll Solutions Private Limited #229, 2nd Floor, 2A Main, 5th Cross New Thippasandra, Bangalore-560075	
2. Equipment	Bluetooth Low Energy & IEEE 802.15.4 Combo Module	
3. Model No.	MDBT50Q-1M	
4. Manufactured by	Raytac Corporation 5F No.3 Jiankang Rd. Zhonghe Dist., New Taipei City, 235, Taiwan.	
5. Frequency Range (MHz)	2402 - 2480 MHz	
6. Max. Output Power	8.19 dBm	
7. Modulation	O-QPSK, GFSK.	
8. Remarks	This ETA is for RF Module available in the above equipment operating in above frequency band. This is not Import license, separate import license is required for Import.	

MDBT50Q-P



Government of India

Ministry of Communications & IT

Department of Telecommunications, Wireless Planning and Coordination Wing
RLO SR, IMS CAMPUS, PERUNGUDI, CHENNAI - 600 096



FileNo. J-22022/01/2017-RLO(SR)/6478

Date 22-10-2018

ETA Certificate No: ETA - 1325/2017-RLO(SR) On-Line ID 2018118033

Equipment Type Approval is hereby granted for under mentioned equipment for operation with following parameters/conditions:

I. Details of Applicant and parameters of Equipment:

1. Name and address of the Applicant	Atoll Solutions Private Limited #229, 2nd Floor, 2A Main, 5th Cross New Thippasandra, Bangalore-560075
2. Equipment	Bluetooth Low Energy & IEEE 802.15.4 Combo Module
3. Model No.	MDBT50Q-P1M
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5. Frequency Range (MHz)	2402 - 2480 MHz
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7. Modulation	O-QPSK, GFSK.
8. Remarks	This ETA is for RF Module available in the above equipment operating in above frequency band. This is not Import license, separate import license is required for Import.

11. Basic Facts for nRF52 Family

Below chart shows basic spec for Nordic nRF52 family, which is helpful to understand the differences between each SoC. Any discrepancy shall refer to Nordic's technical document as final reference.

See [Full List of Raytac's BLE Modules](#) for complete model no. of each item.

Nordic Solution	nRF52840	nRF52833	nRF52820	nRF52832	nRF52810	nRF52811	nRF52805
RAYTAC Model No. (MDBTXX)	50Q series	50Q series 50 series	50 series	42Q series 42 series 42V series	42Q series	42Q Series	42T series 42TV series
Bluetooth Direction Finding		V	V			V	
Bluetooth 5 Long Range (125kbps)	V	V	V			V	
Bluetooth 5 High Speed	V	V	V	V	V	V	V
Bluetooth 5 Ad. Extention (x8)	V	V	V	V	V	V	V
Flash (kBytes)	1024	512	256	512	192	192	192
RAM (kBytes)	256	128	32	64	24	24	24
ANT Plus	V	V	V	V	V	V	
IEEE 802.15.4	V	V	V			V	
ARM® TrustZone® Cryptocell	V						
USB	V	V	V				
QSPI	V						
NFC	V	V		V			
I2S	V	V		V			
SPI, TWI, UART, PWM	V	V	V	V	V	V	without PWM
PDM	V	V		V	V	V	
ADC, Comparators	V	V	without ADC	V	V	V	without comparators
Supply Range (V)	1.7 to 5.5	1.7 to 5.5	1.7 to 5.5	1.7 to 3.6	1.7 to 3.6	1.7 to 3.6	1.7 to 3.6

12. Useful Links

- **Nordic Infocenter:** <https://infocenter.nordicsemi.com/index.jsp>
All the necessary technical files and software development kits of Nordic's chip are on this website.
- **Nordic DevZone:** <https://devzone.nordicsemi.com/questions/>
A highly recommended website for firmware developer. Interact, discuss and consult with other fellow developers and Nordic's employees to get answers to your questions. The site also includes tutorials in detail to help you get started.
- **Official Page of nRF52840 :** <https://www.nordicsemi.com/eng/Products/nRF52840>
A brief introduction to nRF52840 and download links for Nordic's developing software and SoftDevices.

Full List of Raytac's BLE Modules

● MDBT40 Series

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT40	nRF51822	MDBT40-256V3	3	Chip Antenna	16 kb	256 K
		MDBT40-256RV3			32 kb	256 K
MDBT40-P	nRF51822	MDBT40-P256V3	3	PCB Antenna	16 kb	256 K
		MDBT40-P256RV3			32 kb	256 K

● MDBT42Q Series (QFN Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT42Q	nRF52832	MDBT42Q-512KV2	2	Chip Antenna	64 kb	512 K
	nRF52810	MDBT42Q-192KV2	2		24 kb	192 K
	nRF52811	MDBT42Q-192KL	1			
MDBT42Q-P	nRF52832	MDBT42Q-P512KV2	2	PCB Antenna	64 kb	512 K
	nRF52810	MDBT42Q-P192KV2	2		24 kb	192 K
	nRF52811	MDBT42Q-P192KL	1			
MDBT42Q-U	nRF52832	MDBT42Q-U512KV2	2	u.FL Connector	64 kb	512 K

● MDBT42 Series (WLCSP Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT42	nRF52832	MDBT42-512KV2	2	Chip Antenna	64 kb	512 K
MDBT42-P		MDBT42-P512KV2		PCB Antenna		

● MDBT42V Series (WLCSP Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT42V	nRF52832	MDBT42V-512KV2	2	Chip Antenna	64 kb	512 K
MDBT42V-P		MDBT42V-P512KV2		PCB Antenna		

● MDBT42T Series (WLCSP Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT42T	nRF52805	MDBT42T-192K	1	Chip Antenna	24 kb	192 K
MDBT42T-P		MDBT42T-P192K		PCB Antenna		

● MDBT42TV Series (WLCSP Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT42TV	nRF52805	MDBT42TV-192K	1	Chip Antenna	24 kb	192 K
MDBT42TV-P		MDBT42TV-P192K		PCB Antenna		

● MDBT50Q Series (aQFN Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT50Q	nRF52840	MDBT50Q-1MV2	2	Chip Antenna	256 kb	1 MB
	nRF52833	MDBT50Q-512K	1		128 kb	512 kb
MDBT50Q-P	nRF52840	MDBT50Q-P1MV2	2	PCB Antenna	256 kb	1 MB
	nRF52833	MDBT50Q-P512K	1		128 kb	512 kb
MDBT50Q-U	nRF52840	MDBT50Q-U1MV2	2	u.FL Connector	256 kb	1 MB
	nRF52833	MDBT50Q-U512K	1		128 kb	512 kb
Dongle	nRF52840	MDBT50Q-RX	1, 2	PCB Antenna	256 kb	1 MB

● MDBT50 Series (QFN Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT50	nRF52820	MDBT50-256R	1	Chip Antenna	32 kb	256 kb
	nRF52833	MDBT50-512K	1		128 kb	512 kb
MDBT50-P	nRF52820	MDBT50-P256R	1	PCB Antenna	32 kb	256 kb
	nRF52833	MDBT50-P512K	1		128 kb	512 kb

● MDBT53 Series (WLCSP Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT53	nRF5340	MDBT53-1M	1	Chip Antenna	512 kb	1 MB
MDBT53-P	nRF5340	MDBT53-P1M	1	PCB Antenna	512 kb	1 MB
MDBT53-U	nRF5340	MDBT53-U1M	1	u.FL Connector	512 kb	1 MB

● MDBT53V Series (WLCSP Package IC)

Series	Nordic Solution	Raytac No.	IC Ver.	Antenna	RAM	Flash Memory
MDBT53V	nRF5340	MDBT53V-1M	1	Chip Antenna	512 kb	1 MB
MDBT53V-P	nRF5340	MDBT53V-P1M	1	PCB Antenna	512 kb	1 MB

Release Note

- 2017/10/30 Pre-release

- 2018/01/19 Model no. officially changed to MDBT50Q-1M & MDBT50Q-P1M.

- 2018/04/10 Version A (1st release)

- 2018/06/12 Version B
 - (1) Added Chapter 4: Shipment Packaging Info and Chapter 7: Antenna.

- 2018/09/14 Version C
 - (1) Added link of design guide in Chapter 2
 - (2) Updated photo of module in Chapter 4 and added marking and tray info.
 - (3) Updated schematic in Chapter 8 for easier understanding.
 - (4) Updated Declaration ID & regional certification info in Chapter 9.
 - (5) Added “No-Wash” warning in Chapter 10.

- 2018/11/01 Version D
 - (1) Updated drawing in Chapter 2 for a better understanding of PCB measurement.
 - (2) Updated Chapter 4 with new label info.
 - (3) Added WPC (ETA) certificates in Chapter 9: Certification.

- 2019/05/03 Version E
 - (1) Updated model no. to MDBT50Q-1MV2 & MDBT50Q-P1MV2 because of revision 2 SoC.
 - (2) Updated Chapter 4: Shipment Packaging Info with new module photo, model no. and added tape & reel info.
 - (3) Updated Chapter 5: Specification corresponding to Nordic’s new nRF52840 Product Specification V1.1.
 - (4) Added nRF52811 in Chapter 11: Basic Facts for nRF52 Chips and Full List of Raytac’s BLE Modules.

- 2019/11/04 Version F
 - (1) Added wireless range under radio data rate of 125kbps on front page.
 - (2) Added tolerance information of PCB size and refined descriptions of layout suggestion in Chapter 2: Product Dimension.
 - (3) Updated certification information and added section 11 in Chapter 9: Certification.
 - (4) Added nRF52833 to the chart in Chapter 11: Basic Facts of nRF52 Family & Full List of Raytac 's BLE Modules.

- 2020/02/11 Version G
 - (1) Corrected description of SWDIO & SWCLK in section 5 and added remarks about low frequency GPIO in section 6 of Chapter 2.
 - (2) Refined description of default setting in Chapter 8.

- 2020/06/19 Version H
 - (1) Updated tolerance of PCB size in Chapter 2: Product Dimension.
 - (2) Corrected note “D-” and “D+” in Chapter 8: Reference Circuit
 - (3) Added nRF52820 in Chapter 11: Basic Facts of nRF52 Family.
 - (4) Updated Full List of Raytac's BLE modules.

- 2020/12/30 Version I
 - (1) Updated information of T&R in Chapter 4: Shipment Packaging Information.
 - (2) Added BT 5.2 SIG approval & NCC Certificate in Chapter 9: Certification.
 - (3) Updated table in Chapter 11: Basic Facts for nRF52 Family.
 - (4) Updated Full List of Raytac's BLE Modules

- 2021/05/28 Version J
 - (1) Updated MPQ information for T&R package in Chapter 4: Shipment Packaging Information.
 - (2) Updated Chapter 5: Specification corresponding to Nordic's new nRF52840 Product Specification V1.2

- 2022/07/01 Version K
 - (1) Updated Chapter 4: 4.2.1 Tray Packaging with 4.2.2 Tape & Reel Packaging info.
 - (2) Updated Chapter 2: 2.3 RF Layout Suggestion (aka Keep-Out Area).
 - (3) Updated List of Raytac's Model no.
 - (4) Corrected Schematic and info in Chapter 8: Reference Circuit.
 - (5) Updated Chapter 5: Specification corresponding to Nordic's new nRF52840 Product Specification V1.7.

- 2023/05/24 Version L
 - (1) Updated drawing in Chapter 2 for a better understanding of PCB measurement & RF Layout Suggestion.