Prüfbericht-Nr.: *Test Report No.:*	**50072029 001**	**Auftrags-Nr.:** *Order No.:*	**154213766**	**Seite 1 von 11** *Page 1 of 11*
Kunden-Referenz-Nr.: *Client Reference No.:*	**615487**	**Auftragsdatum:** *Order date:*	**12.02.2016**	
Auftraggeber: *Client:*	**ALE International** 32 avenue Kléber – 92700 Colombes - France			
Prüfgegenstand: *Test item:*	**BTDB02**			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	**BTBD02** **FCC ID: OL3BTMOD02** **IC: 1737D-BTMOD02**			
Auftrags-Inhalt: *Order content:*	**Complete test**			
Prüfgrundlage: *Test specification:*	**FCC KDB # 447498 D01 V06** **RSS-102 Issue 5, March 2015**			
Wareneingangsdatum: *Date of receipt:*	**11.17.2016**			
Prüfmuster-Nr.: *Test sample No.:*	**A000457947-001**			
Prüfzeitraum: *Testing period:*	**11.18.2016 to 02.23.2017**			
Ort der Prüfung: *Place of testing:*	**MRT Technology(Suzhou) Co., Ltd.**			
Prüflaboratorium: *Testing laboratory:*	**TÜV Rheinland (Shanghai) Co., Ltd.**			
Prüfergebnis*: *Test result*:*	**Pass**			

geprüft von / *tested by*:

03.04.2017	Elliot Zhang / Senior Project Engineer	Senior Zhang
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

03.04.2017	Shi Li / Section Manager	SL
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

TEST SUMMARY

2.3.1 FCC EVALUATION FOR BLUETOOTH CLASSIC
RESULT: Pass

2.3.2 FCC EVALUATION FOR BLUETOOTH LOW ENERGY
RESULT: Pass

2.4.1 IC EVALUATION FOR BLUETOOTH CLASSIC
RESULT: Pass

2.4.2 IC EVALUATION FOR BLUETOOTH LOW ENERGY
RESULT: Pass

Contents

1. General Product Information

1.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a Bluetooth 4.2 dual-mode module using on telephone.

The aim of this report is to evalute the RF Exposure of the EUT.

For details refer to the User Manual and Circuit Diagram.

1.2 Ratings and System Details

Table 1: Technical Specification of EUT

General Description of EUT	
Product Name:	BTDB02
Brand Name:	Alcatel-Lucent
Model No.:	BTDB02
Rated Voltage:	DC 3.3V
Type of Product:	Portable Device
Bluetooth Classical	
Frequency Range:	2402 – 2480MHz
Modulation Type:	BR: GFSK EDR: π/4-DQPSK; 8DPSK
Antenna Type:	PCB Antenna
Antenna Gain:	5.1dBi
Bluetooth Low Energy	
Frequency Range:	2402 – 2480MHz
Modulation Type:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	5.1dBi

2. RF Exposure

2.1 FCC Requirement and Limit

According to FCC KDB # 447498 D01 V06, Clause 4.3.1

(a) For 100MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$\frac{(\text{max. power of channel, including tune - up tolerance, mW})}{(\text{min. test separation distance, mm})} \times \sqrt{\text{f(GHz)}}$$

≤ 3.0 ,for 1-g SAR, and ≤ 7.5 , for 10-g extremity SAR

2.2 IC Requirement and Limit

According to IC RSS-102 Issue 5, March 2015, Clause 2.5.1 Exemption Limits for Routine Evaluation – SAR Evaluation.
SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance

Frequency [MHz]	Exemption Limits [mW]				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71	101	132	162	193
450	52	70	88	106	123
835	17	30	42	55	67
1900	7	10	18	34	60
2450	4	7	15	30	52
3500	2	6	16	32	55
5800	1	6	15	27	41

Frequency [MHz]	Exemption Limits [mW]				
	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of ≥50 mm
≤300	223	254	284	315	345
450	141	159	177	195	213
835	80	92	105	117	130
1900	99	153	225	316	431
2450	83	123	173	235	309
3500	86	124	170	225	290
5800	56	71	85	97	106

2.3 FCC Evaluation Results

2.3.1 FCC Evaluation for Bluetooth Classic

RESULT: **Pass**

According to the Bluetooth Classic RF test report No. 50072027 001 issued by TÜV Rheinland (Shanghai) Co., Ltd. And the maximum conducted output power declared in the user manual. The maximum peak conducted output power is

Frequency [GHz]	Maximum Conducted Peak Output Power measured [dBm]	Maximum Conducted Peak Output Power Declared in the UM [dBm]	Maximum Conducted Peak Output Power [mW]
2.402	5.13	6	3.981071706

And the EIRP is:

Frequency [GHz]	Maximum Conducted Peak Output Power [dBm]	Maximum Antenna Gain [dBi]	Duty Cycle	Maximum EIRP [mW]
2.402	6	5.1	100%	12.88249552

And for the frequency 2.402GHz, the SAR test exclusion thresholds at the test separation distance 15mm is,
1-g SAR test exclusion thresholds = 29.03527958mW
10-g SAR test exclusion thresholds = 72.58819896mW

Note: The distance 15mm was declared in the user manual and was used to determine the SAR test exclusion.

Conclusion
The device is excluded for SAR test and complies with the FCC exposure requirements since the maximum conducted peak output power is lower than the SAR test exclusion thresholds.

2.3.2 FCC Evaluation for Bluetooth Low Energy

RESULT: **Pass**

According to the Bluetooth Low Energy RF test report No. 50072028 001 issued by TÜV Rheinland (Shanghai) Co., Ltd. And the maximum conducted output power declared in the user manual.
The maximum peak conducted output power is

Frequency [GHz]	Maximum Conducted Peak Output Power measured [dBm]	Maximum Conducted Peak Output Power Declared in the UM [dBm]	Maximum Conducted Peak Output Power [mW]
2.480	-6.68	-4	0.398107171

And the EIRP is:

Frequency [GHz]	Maximum Conducted Peak Output Power [dBm]	Maximum Antenna Gain [dBi]	Duty Cycle	Maximum EIRP [mW]
2.480	-4	5.1	100%	1.288249552

And for the frequency 2.48GHz, the SAR test exclusion thresholds at the test separation distance 15mm is,
1-g SAR test exclusion thresholds = 28.57502858mW
10-g SAR test exclusion thresholds = 71.43757144mW

Note: The distance 15mm was declared in the user manual and was used to determine the SAR test exclusion.

Conclusion
The device is excluded for SAR test and complies with the FCC exposure requirements since the maximum conducted peak output power is lower than the SAR test exclusion thresholds.

2.4 IC Evaluation Results

2.4.1 IC Evaluation for Bluetooth Classic

RESULT: **Pass**

According to the Bluetooth Classic RF test report No. 50072027 001 issued by TÜV Rheinland (Shanghai) Co., Ltd. And the maximum conducted output power declared in the user manual. The maximum peak conducted output power is

Frequency [GHz]	Maximum Conducted Peak Output Power measured [dBm]	Maximum Conducted Peak Output Power Declared in the UM [dBm]	Maximum Conducted Peak Output Power [mW]
2.402	5.13	6	3.981071706

And the EIRP is:

Frequency [GHz]	Maximum Conducted Peak Output Power [dBm]	Maximum Antenna Gain [dBi]	Duty Cycle	Maximum EIRP [mW]
2.402	6	5.1	100%	12.88249552

And according to IC RSS-102 Issue 5, March 2015, table 1, for the frequency 2.45GHz, the SAR test exclusion thresholds at the test separation distance 15mm is 15mW.

Note: The distance 15mm was declared in the user manual and was used to determine the SAR test exclusion.

Conclusion
The device is excluded for SAR test and complies with the IC exposure requirements since the maximum conducted peak output power is lower than the SAR test exclusion thresholds.

2.4.2 IC Evaluation for Bluetooth Low Energy

RESULT: **Pass**

According to the Bluetooth Low Energy RF test report No. 50072028 001 issued by TÜV Rheinland (Shanghai) Co., Ltd. And the maximum conducted output power declared in the user manual.
The maximum peak conducted output power is

Frequency [GHz]	Maximum Conducted Peak Output Power measured [dBm]	Maximum Conducted Peak Output Power Declared in the UM [dBm]	Maximum Conducted Peak Output Power [mW]
2.480	-6.68	-4	0.398107171

And the EIRP is:

Frequency [GHz]	Maximum Conducted Peak Output Power [dBm]	Maximum Antenna Gain [dBi]	Duty Cycle	Maximum EIRP [mW]
2.480	-4	5.1	100%	1.288249552

And according to IC RSS-102 Issue 5, March 2015, table 1, for the frequency 2.45GHz, the SAR test exclusion thresholds at the test separation distance 15mm is 15mW.

Note: The distance 15mm was declared in the user manual and was used to determine the SAR test exclusion.

Conclusion

The device is excluded for SAR test and complies with the IC exposure requirements since the maximum conducted peak output power is lower than the SAR test exclusion thresholds.

3. List of Tables