

IEEE C95.1
KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

Pressure Control Module

Model: 0830001

Data Applies To: N/A

Trade Name:



Issued to

ARB Corporation Ltd.
42-44 Garden St. Kilsyth, Victoria, Australia, 3137

Issued By

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)

Issued Date: July 20, 2020

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留 90 天。本報告未經本公司書面許可，不可部份複製。

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Report No.: T200701N04-MF

Page: 2 / 7
Rev.: 00

REVISION HISTORY

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	July 20, 2020	Initial Issue	ALL	Angel Cheng



Report No.: T200701N04-MF

Page: 3 / 7
Rev.: 00

TABLE OF CONTENTS

1. LIMIT.....	4
2. EUT SPECIFICATION	5
3. TEST RESULTS.....	6
4. MAXIMUM PERMISSIBLE EXPOSURE.....	7



Report No.: T200701N04-MF

Page: 4 / 7
Rev.: 00

1. TEST RESULT CERTIFICATION

We hereby certify that:

The equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirement of the applicable standards. The test record, data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurement of the sample's RF characteristics under the conditions specified in this report.

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted
Statements of Conformity	
Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.	

Approved by:

Kevin Tsai
Deputy Manager
Compliance Certification Services Inc.

2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

3. EUT SPECIFICATION

EUT	Pressure Control Module		
Model	0830001		
Brand			
RF Module	Raytac	Model:	MDBT42Q-AT
Frequency band (Operating)	☐ 802.11b/g/n HT20: 2412MHz ~ 2462MHz 802.11n HT40: 2422MHz ~ 2452MHz ☒ Others 2402MHz ~ 2480MHz (BT 4.0)		
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others		
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)		
Antenna Specification	Multilayer Chip Antenna / Gain: -1.6 dBi (Numeric gain: 0.69) worst		
Maximum Output power	GFSK(4.0)	2.03 dBm	(1.596 mW)
Maximum Average output power	GFSK(4.0)	1.76 dBm	(1.499 mW)
Maximum Tune up Power	GFSK(4.0)	2.50 dBm	(1.778 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A		
Reported Date	July 10, 2020		

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²



Report No.: T200701N04-MF

Page: 7 / 7
Rev.: 00

5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

GFSK(4.0):

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)	Result
High	2480	1.778	0.69	20	0.0002	1	Pass