



RADIO EXPOSURE TEST REPORT

Equipment : Vocollect Talkman
Brand Name : Honeywell
Model Name : TAP1020-01
Applicant : 漢威聯合股份有限公司
 新北市板橋區遠東路 3 號 5 樓
Manufacturer : Honeywell International Inc.
 9680 Old Bailes Road, Fort Mill, SC 29707 USA
Standard : NCC LP0002 (Jul. 01, 2020) Section 6.20 (6.20.2)

The product was received on Sep. 09, 2021, and testing was started from Oct. 01, 2021 and completed on Nov. 12, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in NCC LP0002 (Jul. 01, 2020) Section 6.20 (6.20.2) and shown compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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Photographs of EUT v01



History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A1_1 Ver1.1

Page Number : 3 of 8
Issued Date : Jan. 27, 2022
Report Version : 01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Penny Kao



1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5240 5260-5320 5500-5700 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Bluetooth	2400-2483.5	2402-2480	BR / EDR: FHSS (GFSK / $\pi/4$ -DQPSK / 8DPSK) LE: GFSK

1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)		
						WLAN 2.4GHz	WLAN 5GHz	Bluetooth
1	1	Honeywell	VOC_A700x_antWifi	PCB Antenna	I-PEX	2.59	3.84	-
2	1	Honeywell	VOC_A700x_ant_bt	PCB Antenna	N/A	-	-	-3.17

Note: The above information was declared by manufacturer.

For 2.4GHz function:

For IEEE 802.11b/g/n (1TX/1RX):

Only Port 1 can be used as transmitting/receiving functions

For 5GHz function:

For IEEE 802.11a/n/ac (1TX/1RX):

Only Port 1 can be used as transmitting/receiving functions

For Bluetooth function (1TX, 1RX):

Only Port 1 can be used as transmitting/receiving functions



1.3 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Rechargeable Lithium ion battery 1	Honeywell	TBA901-03	Nominal Voltage: 3.65Vdc Rated capacity: 2.75Ah/10.04Wh
Rechargeable Lithium ion battery 2	Honeywell	TBA902-03	Nominal Voltage: 3.65Vdc Rated capacity: 5.5Ah/20.08Wh

1.4 Testing Location

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
Test site Designation No. TW3787 with FCC.	
Conformity Assessment Body Identifier (CABID) TW3787 with ISED.	

1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: TA190323.

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
Adding model name TAP1020-01. The difference from the original one was the additional connector board.	The test results of this report reference the results of the original Sporton Report No.: TA190323. The modifications of this time do not affect the RF characteristic. Therefore, the content of the original test report is kept.

Note: All of the test results were based on original report.



2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	*100	6
3-30	1842 / f	4.89 / f	*900 / f ²	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5.0	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	*100	30
1.34-30	842/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

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



2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	2.59	16.16	18.75	0.50	19.25	0.08414	20	0.01674	1.00000
5.2G;D1D	3.84	10.70	14.54	0.50	15.04	0.03192	20	0.00635	1.00000
5.3G;D1D	3.84	13.50	17.34	0.50	17.84	0.06081	20	0.01210	1.00000
5.6G;D1D	3.84	15.66	19.50	0.50	20.00	0.10000	20	0.01989	1.00000
5.8G;D1D	3.84	17.18	21.02	0.50	21.52	0.14191	20	0.02823	1.00000
2.4G;BT-EDR	-3.17	4.26	1.09	0.50	1.59	0.00144	20	0.00029	1.00000
2.4G;BT-LE	-3.17	3.91	0.74	0.50	1.24	0.00133	20	0.00026	1.00000

Note: The above antenna gain was declared by manufacturer.

————THE END————