

Spot Check Evaluation

APPLICANT : Honeywell International Inc
EQUIPMENT : Mobile computer/Smart phone
BRAND NAME : Honeywell
MODEL NAME : CT47X1N
FCC ID : HD5-CT47X1N
STANDARD : 47 CFR Part 15 Subpart C §15.247
47 CFR Part 15 Subpart E §15.407

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
272913	Rev. 01	Initial issue of report	Dec. 28, 2022



1 General Description

1.1 Applicant

Honeywell International Inc
9680 Old Bailes Rd, Fort Mill, SC 29707 United States

1.2 Manufacturer

Honeywell International Inc
9680 Old Bailes Rd, Fort Mill, SC 29707 United States

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile computer/Smart phone
Brand Name	Honeywell
Model Name	CT47X1N
FCC ID	HD5-CT47X1N
HW Version	V1.0
SW Version	OS.21.001-HON.21.001
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH05-KS TH01-KS	CN1257	314309

1.6 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH05-KS	AUDIX	E3	6.2009-8-24al

2 Re-use of Measured Data

2.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: CT47X1N, FCC ID: HD5-CT47X1N) is electrically identical to the reference device (Model: CT47X0N, FCC ID: HD5-CT47X0N) for the portions of the circuitry corresponding to the data being re-used. Based on their similarity, the FCC Part 15C (equipment class: DTS, DSS) and FCC Part 15E (equipment class: NII, 6CD) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 v01.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: HD5-CT47X1N.

2.2 Model Difference Information

The **main** difference between FCC ID: HD5-CT47X1N and FCC ID: HD5-CT47X0N is as below:

- Add WWAN Bands.

Other differences and all the details of similarity and difference can be found in the confidential documents (CT47X1N_Operational Description of Product Equality Declaration).

2.3 Reference detail Section:

Rule Part	Equipment Class	Frequency Band (MHz)	Reference FCC ID(Parent)	Type Grant/Permissive Change	Reference Title	FCC ID Filling (Variant)	Report Title/Section
15C	DSS (BR/EDR)	2400~2483.5	HD5-CT47X0N	Original Grant	FR272913-01A	HD5-CT47X1N	All sections applicable
	DTS (BLE)	2400~2483.5	HD5-CT47X0N	Original Grant	FR272913-01B	HD5-CT47X1N	All sections applicable
	DTS (WLAN)	2400~2483.5	HD5-CT47X0N	Original Grant	FR272913-01C	HD5-CT47X1N	All sections applicable
15E	UNII-1.2A, 2C, -3	5150~5850	HD5-CT47X0N	Original Grant	FR272913-01E	HD5-CT47X1N	All sections applicable
	U-NII 5-8	5925~7125	HD5-CT47X0N	Original Grant	FR272913-01F	HD5-CT47X1N	All sections applicable
	DFS	5260~5320 5500~5720	HD5-CT47X0N	Original Grant	FZ272913-01	HD5-CT47X1N	All sections applicable



2.4 Spot Check Verification Data Section

Conducted power test and radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model

Summary for power and RSE spot check for each rule entry and technology is listed as below:

Test Item	Mode	HD5-CT47X0N Parent Worst Result	HD5-CT47X1N Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT	17.87	17.74	-0.13
	BLE 1M for module 1	6.08	5.97	-0.11
	BLE 2M for module 1	6.23	6.06	-0.17
	BLE 1M for module 2	5.88	5.63	-0.25
	BLE 2M for module 2	5.92	5.56	-0.36
	WLAN 2.4G 11B	24.70	24.56	-0.14
	WLAN 2.4G 1G	28.93	28.66	-0.27
	WLAN 2.4G 11N20	28.84	28.48	-0.36
	WLAN 2.4G 11N40	28.71	28.54	-0.17
	WLAN 2.4G 11AX20	28.85	28.74	-0.11
	WLAN 2.4G 11AX40	28.91	28.67	-0.24
	WLAN 5G UNII-1 11A	17.10	16.74	-0.36
	WLAN 5G UNII-2A 11A	22.43	22.16	-0.27
	WLAN 5G UNII-2C 11A	21.85	21.78	-0.07
	WLAN 5G UNII-3 11A	22.01	21.77	-0.24
	WLAN 5G UNII-1 11N20	17.84	17.71	-0.13
	WLAN 5G UNII-2A 11N20	21.08	20.72	-0.36
	WLAN 5G UNII-2C 11N20	21.07	20.9	-0.17
	WLAN 5G UNII-3 11N20	21.00	20.84	-0.16
	WLAN 5G 11N40	20.17	20.02	-0.15
	WLAN 5G UNII-2A 11N40	20.14	19.97	-0.17
	WLAN 5G UNII-2C 11N40	20.13	19.91	-0.22
	WLAN 5G UNII-3 11N40	20.00	19.74	-0.26
	WLAN 5G UNII-1 11AC20	17.87	17.63	-0.24
	WLAN 5G UNII-2A 11AC20	21.22	21	-0.22
	WLAN 5G UNII-2C 11AC20	21.14	20.91	-0.23
	WLAN 5G UNII-3 11AC20	21.05	20.69	-0.36
	WLAN 5G UNII-1 11AC40	20.18	19.8	-0.38
	WLAN 5G UNII-2A 11AC40	20.31	20.07	-0.24
	WLAN 5G UNII-2C 11AC40	20.15	20.02	-0.13
	WLAN 5G UNII-3 11AC40	20.03	19.86	-0.17
	WLAN 5G UNII-1 11AC80	19.51	19.32	-0.19
	WLAN 5G UNII-2A 11AC80	19.35	18.99	-0.36
	WLAN 5G UNII-2C 11AC80	19.34	19	-0.34
	WLAN 5G UNII-3 11AC80	18.87	18.49	-0.38
	WLAN 5G UNII-2A 11AC160	18.34	17.9	-0.44
	WLAN 5G UNII-2C 11AC160	18.25	17.79	-0.46
	WLAN 5G UNII-1 11AX20	17.92	17.64	-0.28
	WLAN 5G UNII-2A 11AX20	21.23	20.99	-0.24
	WLAN 5G UNII-2C 11AX20	21.22	20.93	-0.29

	WLAN 5G UNII-3 11AX20	21.07	20.71	-0.36
	WLAN 5G UNII-1 11AX40	20.27	19.93	-0.34
	WLAN 5G UNII-2A 11AX40	20.32	19.99	-0.33
	WLAN 5G UNII-2C 11AX40	20.32	20	-0.32
	WLAN 5G UNII-3 11AX40	20.24	19.93	-0.31
	WLAN 5G UNII-1 11AX80	19.52	19.31	-0.21
	WLAN 5G UNII-2A 11AX80	19.37	19.2	-0.17
	WLAN 5G UNII-2C 11AX80	19.42	19.23	-0.19
	WLAN 5G UNII-3 11AX80	18.88	18.73	-0.15
	WLAN 5G UNII-2A 11AX160	18.36	18.25	-0.11
	WLAN 5G UNII-2C 11AX160	18.28	17.92	-0.36
	WLAN 6G UNII-5 11AX20	18.69	18.39	-0.3
	WLAN 6G UNII-6 11AX20	9.35	9.04	-0.31
	WLAN 6G UNII-7 11AX20	17.50	17.3	-0.2
	WLAN 6G UNII-8 11AX20	9.95	9.85	-0.1
	WLAN 6G UNII-5 11AX40	18.86	18.69	-0.17
	WLAN 6G UNII-6 11AX40	12.02	11.94	-0.08
	WLAN 6G UNII-7 11AX40	17.61	17.43	-0.18
	WLAN 6G UNII-8 11AX40	13.15	12.96	-0.19
	WLAN 6G UNII-5 11AX80	18.85	18.64	-0.21
	WLAN 6G UNII-6 11AX80	14.97	14.77	-0.2
	WLAN 6G UNII-7 11AX80	17.48	17.31	-0.17
	WLAN 6G UNII-8 11AX80	15.81	15.65	-0.16
	WLAN 6G UNII-5 11AX160	18.92	18.62	-0.3
	WLAN 6G UNII-6 11AX160	17.61	17.3	-0.31
	WLAN 6G UNII-7 11AX160	17.63	17.27	-0.36
	WLAN 6G UNII-8 11AX160	18.12	17.77	-0.35

Test Item	Mode	HD5-CT47X0N Parent Worst Result	HD5-CT47X1N Variant Check Result	Difference (dB)
Radiated Spurious Emission (dBm)	BT(3M)_Tx_Ch00_Ant 10	49.07	49.21	0.14
	BLE_Tx_Ch00_2Mbps-Ant 10	39.76	39.62	-0.14
	WIFI 2.4G 802.11g Ch11	50.63	47.15	-3.48
	WIFI 5G 802.11ax HE40 Ch38	50.88	48.48	-2.4
	WIFI 5G 802.11a Ch165	46.97	47.63	0.66
	WIFI 6E 802.11ax HE40 CH3	57.65	49.9	-7.75

Test Item	Mode	HD5-CT47X0N Parent Worst Result (Adjusted Power) (dBm)	HD5-CT47X1N Variant Check Result (Adjusted Power) (dBm)	Difference (dB)
CBP	UNII-6 BW160M CH Freq. 6430MHz	-62.22	-62.3	-0.08



Conclusion:

Radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result, the test data from the original model is representative for the variant model. The power level and RSE spot check are shown within expected level compliant to limit line.

We are using power measurements from the original parent model reports to list on the grant.

The same DFS detection mechanism/software is used in the variant. Hence, there is no spot check data for DFS hand-shaking mechanism.

The same CBP detection mechanism/software/antenna gain is used in the variant. Hence, all test cases refer to parent report for CBP.

We confirm that the test data reuse policy of FCC KDB 484596 D01 Referencing Test Data v01 has been followed and the test data as referenced from the parent model report represents compliance with new FCC ID.



3 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Dec. 14, 2022	Oct. 11, 2023	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2022	Dec. 14, 2022	Jan. 04, 2023	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz; Max 30dBm	Oct. 13, 2022	Dec. 02, 2022	Oct. 12, 2023	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44G, MAX 30dB	Mar. 24, 2022	Dec. 02, 2022	Mar. 23, 2023	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	Dec. 02, 2022	Oct. 15, 2023	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	May 24, 2022	Dec. 02, 2022	May 23, 2023	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218642	1GHz~18GHz	Apr. 18, 2022	Dec. 02, 2022	Apr. 17, 2023	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Dec. 02, 2022	Jan. 04, 2023	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	380826	9KHz~1GHz	Jul. 11, 2022	Dec. 02, 2022	Jul. 10, 2023	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Dec. 02, 2022	Jan. 04, 2023	Radiation (03CH05-KS)
high gain Amplifier	EM	EM01G18GA	060839	1Ghz~18Ghz	Oct. 12, 2022	Dec. 02, 2022	Oct. 11, 2023	Radiation (03CH05-KS)
Amplifier	EM	EM01G18GA	060833	1Ghz~18Ghz	Jan. 05, 2022	Dec. 02, 2022	Jan. 04, 2023	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Dec. 02, 2022	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Dec. 02, 2022	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Dec. 02, 2022	NCR	Radiation (03CH05-KS)
Spectrum Analyzer	R&S	FSV30	101338	10Hz~30GHz	Apr. 12, 2022	Dec. 14, 2022	Apr. 11, 2023	CBP (DFS01-KS)
MXG-B RF Vector Signal Generator	Keysight	5182B /5182BX07	MY56200417 /MY59360210	9kHz~7.2GHz	May 24, 2022	Dec. 14, 2022	May 23, 2023	CBP (DFS01-KS)
Vector Signal Generator	R&S	SMBV100A	258305	9kHz~6GHz	Jan. 06, 2022	Dec. 14, 2022	Jan. 05, 2023	CBP (DFS01-KS)
Combiner	MTJ Cooperation	MTJ7112	N/A	0.4-6GHz	NCR	Dec. 14, 2022	NCR	CBP (DFS01-KS)

NCR: No Calibration Required.

-THE END-