



SPOT CHECK EVALUATION

FCC ID : UZ7WS5002
Equipment : WS50 Wearable Computer
Model Name : WS5002
Applicant : Zebra Technologies Corporation
Zebra Technologies Corporation
1 Zebra Plaza, Holtsville, NY 11742
Standard : FCC Part 15 Subpart C §15.209
FCC Part 15 Subpart C §15.225
FCC Part 15 Subpart C §15.247
FCC Part 15 Subpart E §15.407
FCC Part 15 Subpart F §15.519

We, Sporton International Inc. Wensan Laboratory, 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. Wensan Laboratory, the test report shall not be reproduced except in full.

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Approved by: Louis Wu

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History of this test report

Version	Description	Issue Date
01	Initial issue of report	May. 13, 2024



1. Introduction Section

FCC ID: UZ7WS5001 (Parent Device) and FCC ID: UZ7WS5002(Variant Device) are identical in the followings:

- The device form factor, the size of display area and the housing material are identical.
- Enclosure and material

FCC ID: UZ7WS5002 (Variant model) is different from FCC ID: UZ7WS5001 (Reference model), in the followings:

- Main board Schematic are differences because there are remove some compatible circuits on the same PCB.
- Some key components of BOM are changed.
- Remove NFC software and hardware.

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: UZ7WS5002



2. Model Difference Information

FCC ID: UZ7WS5002 (Variant model) is different from FCC ID: UZ7WS5001 (Reference model), in the followings:

- Main board Schematic are differences because there are remove some compatible circuits on the same PCB.
- Some key components of BOM are changed.
- Remove NFC software and hardware.

The detail of similarity and difference is illustrated in the data referencing inquiry, and based on the information spot check on conducted power and emission was performed for ensure compliance.



3. Spot Check Verification Data Section

Conducted power test and radiated spurious emission test configurations were selected from the worst cases identified in the parent model and tested to demonstrate the test data from original model remains representative for the variant model.

Based on the RF parameter is still identical so the EBW from original model remains representative for the variant model.

Summary for power and RSE spot check for each FCC rule part is listed as below:

Mode	Test Item	UZ7WS5001Parent Worst mode Test Result	UZ7WS5002Variant Check Test Result	Deviation (dB)	Limit (dB)
BT 1Mbps (CH39)	Peak Output Power	7.04	6.95	0.09	<UZ7WS5001 Certified power
BT 1Mbps (CH00)	Radiated Band Edges and Radiated Spurious Emission	42.32	43.58	1.26	Deviation ddB < 3 dB
BLE 1Mbps (CH19)	Peak Output Power	5.9	5	0.9	<UZ7WS5001 Certified power
BLE 2Mbps (CH19)	Radiated Band Edges and Spurious Emission	52.13	51.14	0.99	Deviation ddB < 3 dB
WIFI 2.4G (802.11b CH1)	Peak Output Power	21.7	21.6	0.1	<UZ7WS5001 Certified power
WIFI 2.4G (802.11an HE40 CH09)	Radiated Band Edges and Spurious Emission	52.02	52.31	0.29	Deviation ddB < 3 dB
WIFI 5G (802.11a CH36)	Conducted Output Power	21.5	21.0	0.5	<UZ7WS5001 Certified power
WIFI 5G (802.11ac VHT80 CH42)	Unwanted Emissions	52.02	52.45	0.43	Deviation ddB < 3 dB

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.

The spot check emission level is not degraded more than 3dB, and the margin to the limit is greater than 1.5dB, data referencing is justified according to the guidance in the KDB inquiry



4. Reference detail Section

Rule Part	Equipment Class	Wireless Technology	Frequency Band (MHz)	Reference FCC ID (Parent)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)
15C	DTS	Bluetooth-LE Wi-Fi	2400~2483.5	UZ7WS5001	Original Grant	FR1O0707-02B FR1O0707-02C	UZ7WS5002
	DSS	Bluetooth	2400~2483.5	UZ7WS5001	Original Grant	FR1O0707-02A	UZ7 WS5002
15E	NII	Wi-Fi	5150~5250 5250~5350 5470~5725 5725~5850	UZ7WS5001	Original Grant	FR1O0707-02E FR1O0707-02F	UZ7 WS5002



5. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-01620	1GHz~18GHz	Aug. 17, 2023	Apr. 01, 2024~ Apr. 04, 2024	Aug. 16, 2024	Radiation (03CH11-HY)
Preamplifier	E-INSTRUMENT TECH LTD.	ERA-10M-700 0-MR	EC1900245	10MHz-7GHz	Jan. 09, 2024	Apr. 01, 2024 ~ Apr. 04, 2024	Jan. 08, 2025	Radiation (03CH11-HY)
Preamplifier	Jet-Power	JPA0118-55- 303	17100018000 55007	1GHz~18GHz	Jun. 14, 2023	Apr. 01, 2024 ~ Apr. 04, 2024	Jun. 13, 2024	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 05, 2023	Apr. 01, 2024 ~ Apr. 04, 2024	Oct. 04, 2024	Radiation (03CH11-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Apr. 01, 2024 ~ Apr. 04, 2024	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Apr. 01, 2024 ~ Apr. 04, 2024	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Apr. 01, 2024 ~ Apr. 04, 2024	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8- 24	RK-001053	N/A	N/A	Apr. 01, 2024 ~ Apr. 04, 2024	N/A	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY1595/2	30MHz~40GHz	Mar. 06, 2024	Apr. 01, 2024 ~ Apr. 04, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz~40GHz	Mar. 06, 2024	Apr. 01, 2024 ~ Apr. 04, 2024	Mar. 05, 2025	Radiation (03CH11-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9K~30M	Mar. 06, 2024	Apr. 01, 2024 ~ Apr. 04, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	30M~40G	Mar. 06, 2024	Apr. 01, 2024 ~ Apr. 04, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12- 2700-3000- 18000-60SS	SN3	3GHz High Pass Filter	Sep. 11, 2023	Apr. 01, 2024 ~ Apr. 04, 2024	Sep. 10, 2024	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP140325	N/A	Dec. 08, 2023	Apr. 01, 2024 ~ Apr. 04, 2024	Dec. 07, 2024	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 07, 2023	Mar. 29, 2024	Nov. 06, 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SN O10 (NO:248)	10MHz~6GHz	Jun. 05, 2023	Mar. 29, 2024	Jun. 04, 2024	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 23, 2023	Mar. 29, 2024	Aug. 22, 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	17I00015SN O36 (NO:35_ 原 144)	10MHz~6GHz	Aug. 23, 2023	Mar. 29, 2024~ Apr. 24, 2024	Aug. 22, 2024	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101564	10Hz ~ 40GHz	Sep. 12, 2023	Mar. 29, 2024~ Apr. 24, 2024	Sep. 11, 2024	Conducted (TH05-HY)

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