



FCC Part 96.47 TEST REPORT

FCC ID : UZ7TC58AE
Equipment : Touch Computer
Brand Name : Zebra
Model Name : TC58AE
Applicant : Zebra Technologies Corporation
1 Zebra Plaza, Holtsville, NY 11742
Manufacturer : Zebra Technologies Corporation
1 Zebra Plaza, Holtsville, NY 11742
Standard : FCC Part 96.47
RF Interface : NR n48

The product was received on Feb. 05, 2024, and testing was performed from Feb. 22, 2024 to Feb. 22, 2024. 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.



Approved by: Jones Tsai

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Product Feature of Equipment Under Test.....	5
1.2 Modification of EUT	6
1.3 Testing Laboratory.....	6
1.4 Applicable Standards.....	6
2 Test Configuration of Equipment Under Test	7
2.1 Connection Diagram of Test System.....	7
3 End User Device additional requirement	8
3.1 Test Requirement	8
3.2 Test Procedure	8
3.3 Test Result.....	9
4 Measuring Equipment List	11
Appendix A. Setup Photographs	



History of this test report

Report No.	Version	Description	Issue Date
FG411111G	01	Initial issue of report	May 10, 2024



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3	96.47	End User Device additional requirement	Pass	-

Conformity Assessment Condition:

The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Wei Chen

Report Producer: Ming Chen



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Touch Computer
Brand Name	Zebra
Model Name	TC58AE
FCC ID	UZ7TC58AE
Sample 1	SE55 + 8GB 128G (Samsung/SK Hynix)
Sample 2	SE4720 + 6GB 64G (SK Hynix/WD)
Sample 3	SE4770 + 6GB 64G (SK Hynix/WD)
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/NFC/GNSS WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
HW Version	DV1-2
SW Version	nemesis_A13_userdebug_GMS_RelKey_2023-12-12-0451_main_SE
FW Version	FUSION_QA_6_1.1.0.004_T
MFD	06DEC23
EUT Stage	Identical Prototype

Remark: The EUT's information above is declared by manufacturer.

Specification of Accessories				
Adapter	Brand Name	Zebra	Part Number	PWR-WUA5V12W0US
Battery 1 (1x)	Brand Name	Zebra	Part Number	BT-000442-0020
Battery 2 (1.5x)	Brand Name	Zebra	Part Number	BT-000442-0820
Battery 3 (BLE battery)	Brand Name	Zebra	Part Number	BT-000442-002B
Battery 4 (Wireless Battery)	Brand Name	Zebra	Part Number	BT-000442-002A
Battery 5 (1x)	Brand Name	Zebra	Part Number	BT-000442-1020
USB TYPE A to TYPE C cable	Brand Name	Zebra	Part Number	CBL-TC5X-USBC2A-01
USB TYPE C to 3.5mm audio connector	Brand Name	Zebra	Part Number	ADP-USBC-35MM1-01
3.5mm Earphone	Brand Name	Zebra	Part Number	HDST-35MM-PTT1-01
Rugged Headset	Brand Name	Zebra	Part Number	HS2100-OTH
USB TYPE C Earphone	Brand Name	Zebra	Part Number	HPST-USBC-PTT1-01
Trigger Handle	Brand Name	Zebra	Part Number	TRG-NGTC5-ELEC-01
Soft Holster	Brand Name	Zebra	Part Number	SG-NGTC5TC7-HLSTR-01
TC53/TC58 RUGGED BOOT	Brand Name	Zebra	Part Number	SG-NGTC5EXO1-01
3.5mm to 3.5mm audio connector	Brand Name	Zebra	Part Number	CBL-HS2100-3MS1-01

1.2 Modification of EUT

No modifications are made to the EUT during the entire test sessions.

1.3 Testing Laboratory

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY
Test Engineer	Alston Tsai
Temperature	21 ~ 23 °C
Relative Humidity	47 ~ 52 %

FCC designation No.: TW3786

1.4 Applicable Standards

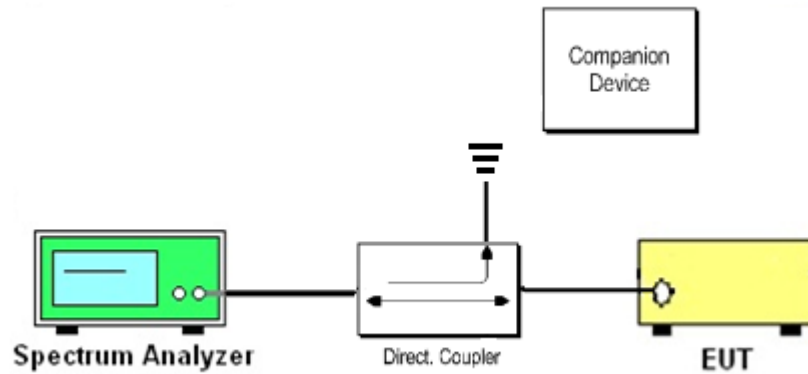
- ♦ FCC Part 96.47
- ♦ FCC KDB 940660 D01 Part 96 CBRS Eqpt v03
- ♦ WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.
The FCC KDBs cited above are out of test laboratory's ISO 17025 accreditation scope. (For Sporton USA)

2 Test Configuration of Equipment Under Test

2.1 Connection Diagram of Test System



The companion device is a certified NR CBSD (FCC ID: PIDAS2900)

3 End User Device additional requirement

3.1 Test Requirement

FCC Part 96.47

(a) End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.

(1) An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

3.2 Test Procedure

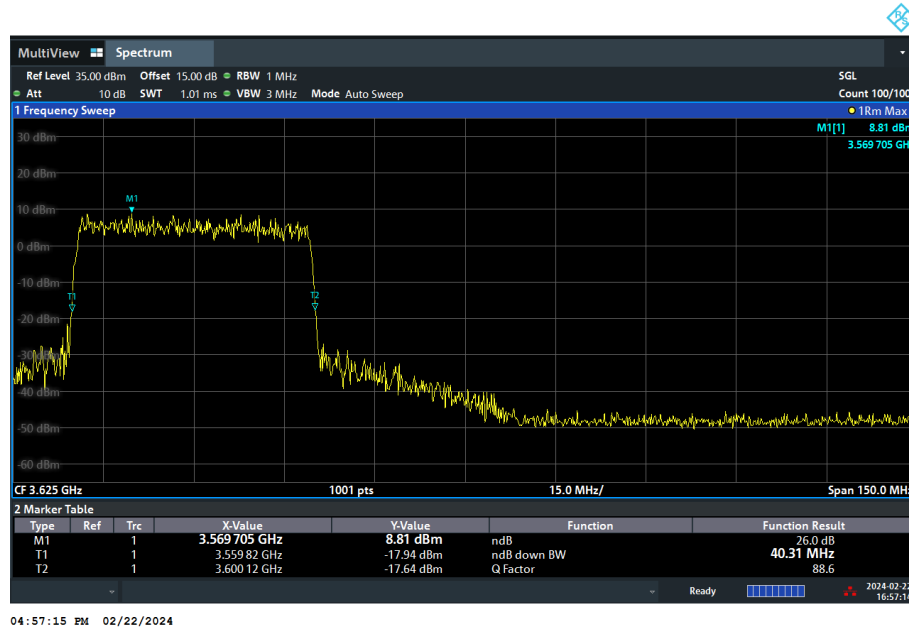
The following procedure is following in accordance with WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification, using the certified Airspan NR CBSD (FCC ID: PIDAS2900) as companion device to present compliance with Part 96.47 requirement for End User Device (EUD):

1. Configure SAS granted CBSD to operate at frequency 3560-3600 MHz and power level 10 dBm/MHz
2. Enable CBSD service from Airspan ACP management
3. Check EUD Tx Frequency and power
4. Disable CBSD service from Airspan ACP management
 - a. Check if EUD stops transmission within 10 seconds.
5. Configure SAS granted CBSD to operate at frequency 3650-3690 MHz and power level 20 dBm/MHz
6. Enable CBSD service from Airspan ACP management
7. Check EUD Tx Frequency and power
8. Disable CBSD service from Airspan ACP management
 - a. Check if EUD stops transmission within 10 seconds.

3.3 Test Result

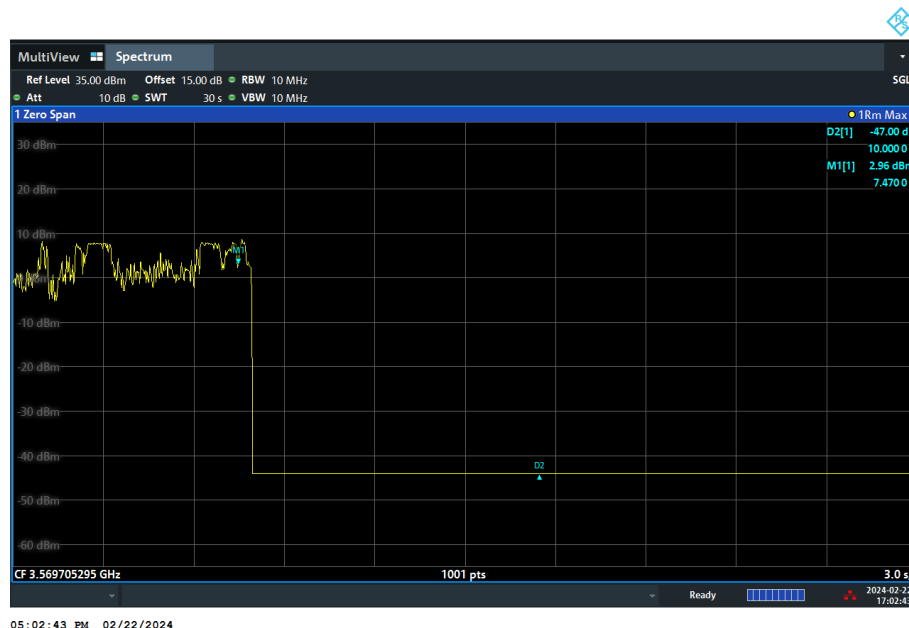
[Step 1] Configure SAS granted CBSD to operate at
frequency 3560-3600 MHz and power level 10 dBm/MHz

[Step 3] Check EUD Tx Frequency and power



04:57:15 PM 02/22/2024

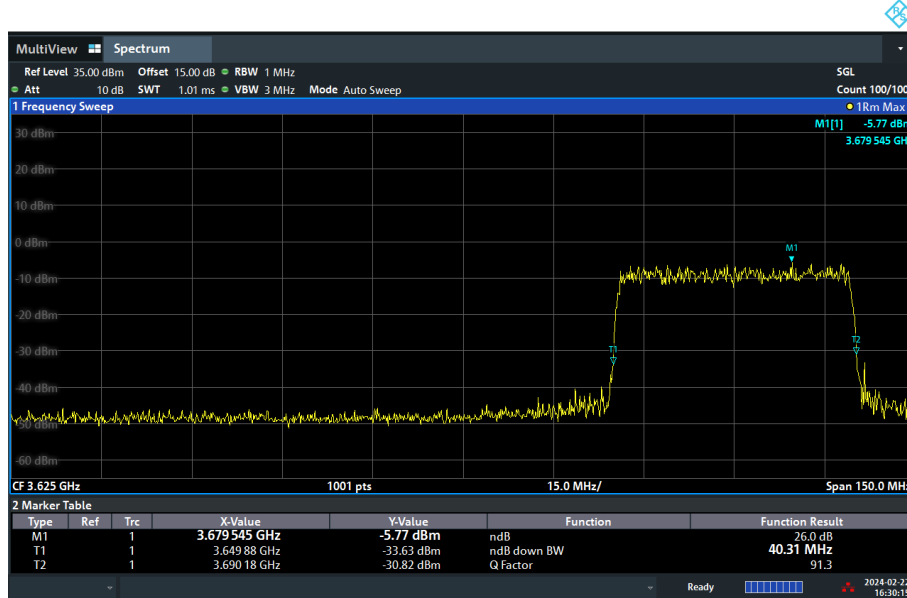
[Step 4.a.] EUD stops transmission within 10 seconds right after receiving instructions from its associated CBSD.



05:02:43 PM 02/22/2024

**[Step 5] Configure SAS granted CBSD to operate at
frequency 3650-3690 MHz & power level 20 dBm/MHz**

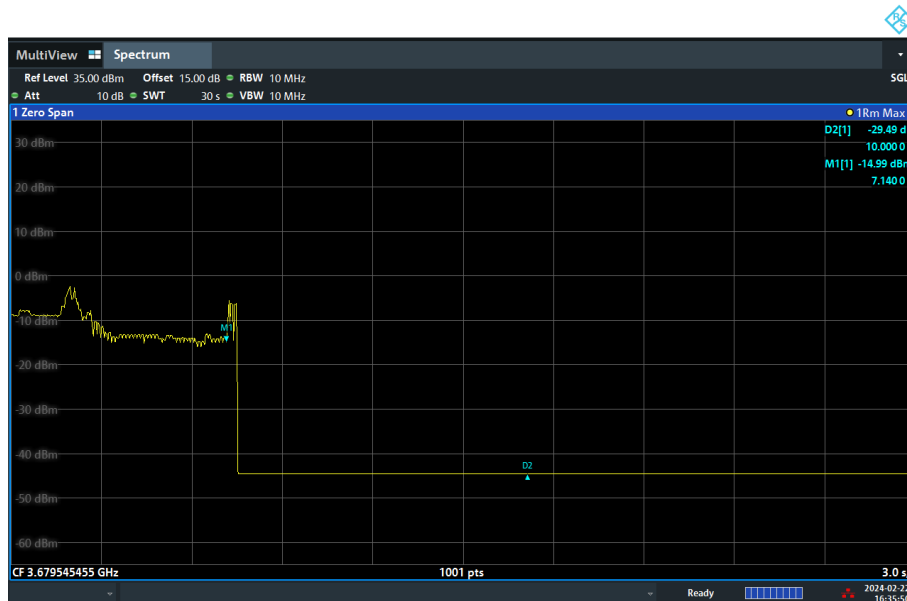
[Step 7] Check EUD Tx Frequency and power



04:30:16 PM 02/22/2024

[Step 8.a.] After changing the frequency and power level,

The EUD discontinues operating, changes frequencies, or changes its operational power level within 10 seconds right after receiving instructions from its associated CBSD. Test result is a PASS.



04:35:51 PM 02/22/2024



4 Measuring Equipment List

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV3044	101433	10Hz~44GHz	Nov. 17, 2023	Feb. 22, 2024	Nov. 16, 2024	Conducted (TH05-HY)
DC Power Supply	GW Instek	GPE-2323	GET861546	0V~64V ; 0A~6A	Jun. 14, 2023	Feb. 22, 2024	Jun. 13, 2024	Conducted (TH05-HY)