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TEST REPORT

47 CFR Part 15, Subpart C 15.247

Report Reference No.: CTL2507222072-WF02M1

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Product Name: Car Diagnostic Tool

Model/Type reference: DS500 BT

List Model(s): Refer the page 2

Trade Mark: ANCEL

FCC ID: 2ASC7DS500BT

Applicant's name: OBDSpace Technology Co., Ltd.

Address of applicant: Room D03, Building A, No.973, MinZhi Avenue LongHua district, Shenzhen City, China

Test Firm: Shenzhen CTL Testing Technology Co., Ltd.

Address of Test Firm: Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

Test specification:

Standard: 47 CFR Part 15, Subpart C 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

TRF Originator: Shenzhen CTL Testing Technology Co., Ltd.

Master TRF: Dated 2011-01

Date of receipt of test item: December 9, 2025

Date of Test Date: December 9, 2025-December 31, 2025

Date of Issue: December 31, 2025

Result: Pass

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TEST REPORT

Test Report No. : CTL2507222072-WF02M1	December 31, 2025 Date of issue
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Equipment under Test : Car Diagnostic Tool

Sample No : CTL250722207013, CTL250826202003

Model /Type : DS500 BT

Listed Models : DS510 BT, DS520 BT, DS530 BT, DS540 BT, DS550 BT, DS560 BT, DS570 BT, DS580 BT, DS590 BT, DS500 Elite, DS510 Elite, DS520 Elite, DS530 Elite, DS540 Elite, DS550 Elite, DS560 Elite, DS570 Elite, DS580 Elite, DS590 Elite

Applicant : **OBDSPACE TECHNOLOGY CO.,LTD**

Address : Room D03, Building A, No.973, MinZhi Avenue
LongHua district, Shenzhen City, China

Manufacturer : **OBDSPACE TECHNOLOGY CO.,LTD**

Address : Room D03, Building A, No.973, MinZhi Avenue
LongHua district, Shenzhen City, China

Test result	Pass *
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* In the configuration tested, the EUT complied with the standards specified page 5.

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

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1. SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:

[47 CFR Part 15, Subpart C 15.247](#) Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

[ANSI C63.10: 2020](#): American National Standard for Testing Unlicensed Wireless Devices

[KDB 558074 D01 v05r02](#): KDB558074 D01 15.247 Meas Guidance v05r02

1.2. Test Description

47 CFR Part 15, Subpart C 15.247		
47 CFR Part 15, Subpart C 15.207	AC Power Conducted Emission	PASS
47 CFR Part 15, Subpart C 15.109/15.205/15.209	Radiated Emissions	PASS

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.10 and CISPR 32/EN 55032 requirements.

1.3.2 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No. 4343.01

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

IC Registration No.: 9618B

CAB identifier: CN0041

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9618B.

FCC-Registration No.: 399832

Designation No.: CN1216

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 399832.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Measurement Uncertainty	Notes
Transmitter power Radiated	± 2.20 dB	(1)
Radiated Emission 9kHz~30MHz	± 3.66 dB	(1)
Radiated Emission 30~1000MHz	± 4.08 dB	(1)
Radiated Emission Above 1GHz	± 4.32 dB	(1)
DTS Bandwidth	$\pm 1.9\%$	(1)
Maximum Conducted Output Power	± 1.18 dB	(1)
Maximum Power Spectral Density Level	± 0.98 dB	(1)
Band-edge	± 1.21 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-7GHz: ± 1.09 dB 7GHz-26.5GHz: ± 3.27 dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

2. GENERAL INFORMATION

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2. General Description of EUT

Product Name:	Car Diagnostic Tool
Model/Type reference:	DS500 BT
Power supply:	Powered by a 3.8V DC battery Type-C Input: DC 5V/2.5A
Test Voltage:	Powered by a 3.8V DC battery Type-C Input: DC 5V/2.5A
Adapter information	Model:FJ-SW1260502500UN Input: 100-240V~ 50/60Hz 0.4A Max Output:5.0V---2.5A, 12.5W
Bluetooth Low Energy	
Supported type:	Bluetooth Low Energy
Modulation:	GFSK
Operation frequency:	2402MHz to 2480MHz
Channel number:	40
Channel separation:	2MHz
Antenna type:	FPC Antenna
Antenna gain:	1.29dBi

Note1: For more details, please refer to the user's manual of the EUT.

Note2: Antenna gain provided by the applicant.

Note3: This report is based on test report CTL2507222072-WF02 with the following modifications.

Description of modify and/or change(s):

1. Add the series model.

2. Add an OBD port.

For the above described modification(s) the following testing are considered to be necessary:.

Modification	Testing	Comments	Result
1	N/A	No additional tests needed	N/A
2	Yes	47 CFR Part 15, Subpart C 15.207, 47 CFR Part 15, Subpart C 15.109/ 15.205/ 15.209	PASS

History of amendment and modifications:

Ref. No. CTL2507222072-WF02, dated October 16, 2025(original test report);

Ref. No. CTL2507222072-WF02M1, dated December 31, 2025(1st modification);

2.3. Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

There are 40 channels provided to the EUT and Channel 00/19/39 were selected for Bluetooth Low Energy test.

Operation Frequency List :

Channel	Frequency (MHz)
00	2402
02	2404
03	2406
⋮	⋮
19	2440
⋮	⋮
37	2476
38	2478
39	2480

Note: The line display in grey were the channel selected for testing

Software Version: adb.exe	
Test Mode	Power level
BLE 1M	0
BLE 2M	0

2.4. Equipments Used during the Test

Conducted Emission					
Test Equipment	Manufacturer	Model No.	Serial No.	Last calibration	Calibration Due
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2025/04/29	2026/04/28
LISN	ROHDE & SCHWARZ	ESH2-Z5	860014/010	2025/04/29	2026/04/28
Limitator	ROHDE & SCHWARZ	ESH3-Z2	100408	2025/04/29	2026/04/28
Software:					
Name of Software:			Version:		
ES-K1			V1.71		

Radiated Emission					
Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
Active Loop Antenna	Da Ze	ZN30900A	/	2024/04/30	2027/04/29
Double cone logarithmic antenna	Schwarzbeck	VULB 9168	824	2025/07/26	2026/07/25
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2025/11/24	2026/11/23
Horn Antenna	Ocean Microwave	OBH100400	26999002	2025/02/21	2028/02/20
Amplifier	MRT-AP01M06	MRT	S-001	2025/04/29	2026/04/28
Amplifier	Brief&Smart	LNA-4018	2104197	2025/04/30	2026/04/29
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1166.5950.03	2025/04/29	2026/04/28
Spectrum Analyzer	RS	FSP	1164.4391.38	2025/04/29	2026/04/28
Software:					
Name of Software:			Version:		
EZ EMC(Below 1GHz)			V1.1.4.2		
EZ EMC(Above 1GHz)			V1.1.4.2		

RF Conducted					
Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
Spectrum Analyzer	Keysight	N9020A	MY53420874	2025/04/29	2026/04/28
Temperature/Humidity Meter	Ji Yu	MC501	/	2025/05/06	2026/05/05
Software:					
Name of Software:			Version:		
TST-PASS			V2.0.1		

2.5. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.6. Modifications

No modifications were implemented to meet testing criteria.

3. TEST CONDITIONS AND RESULTS

3.1. Conducted Emissions Test

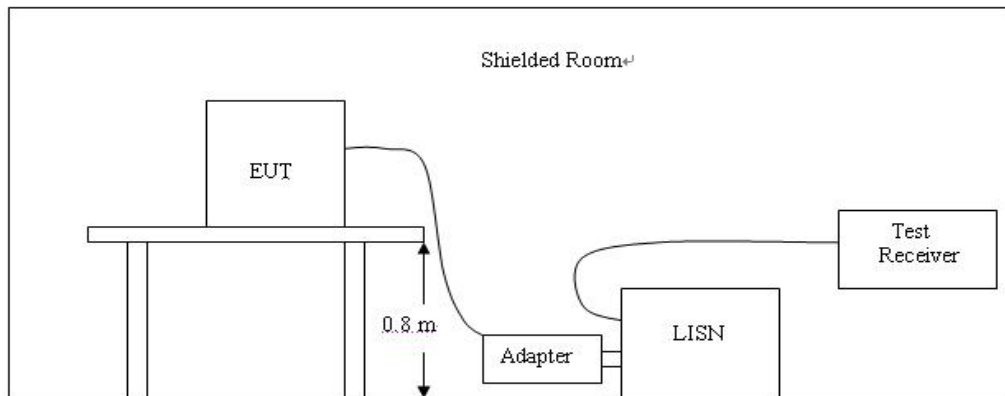
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2020.
2. Support equipment, if needed, was placed as per ANSI C63.10:2020.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2020.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

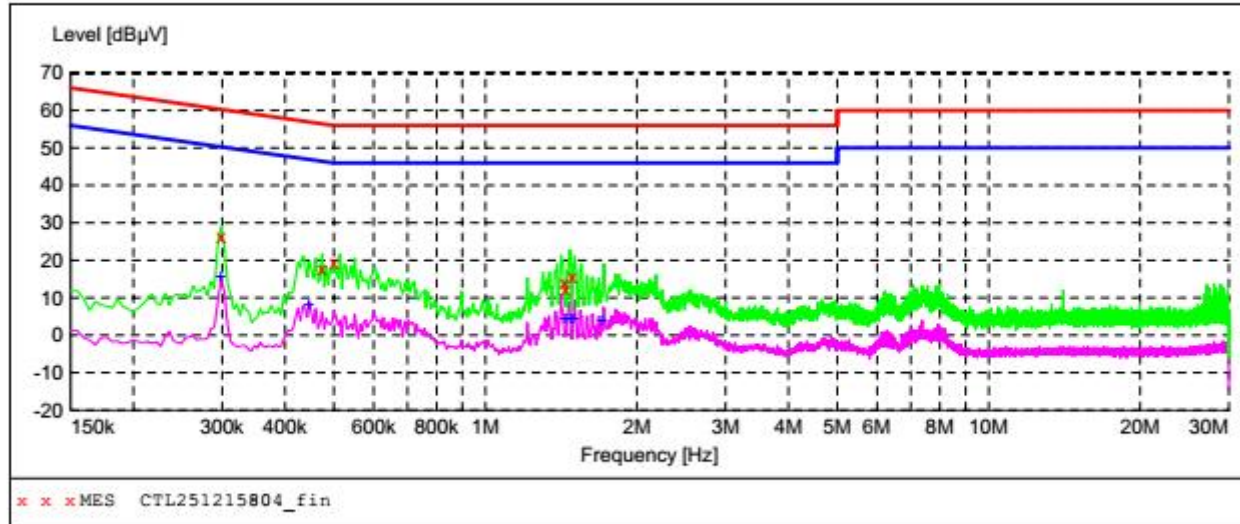
Remark: Both BLE 1M and BLE2M have been tested, and only the low-channel data of the worst BLE 1M is reflected.

Line:

L

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "CTL251215804_fin"**

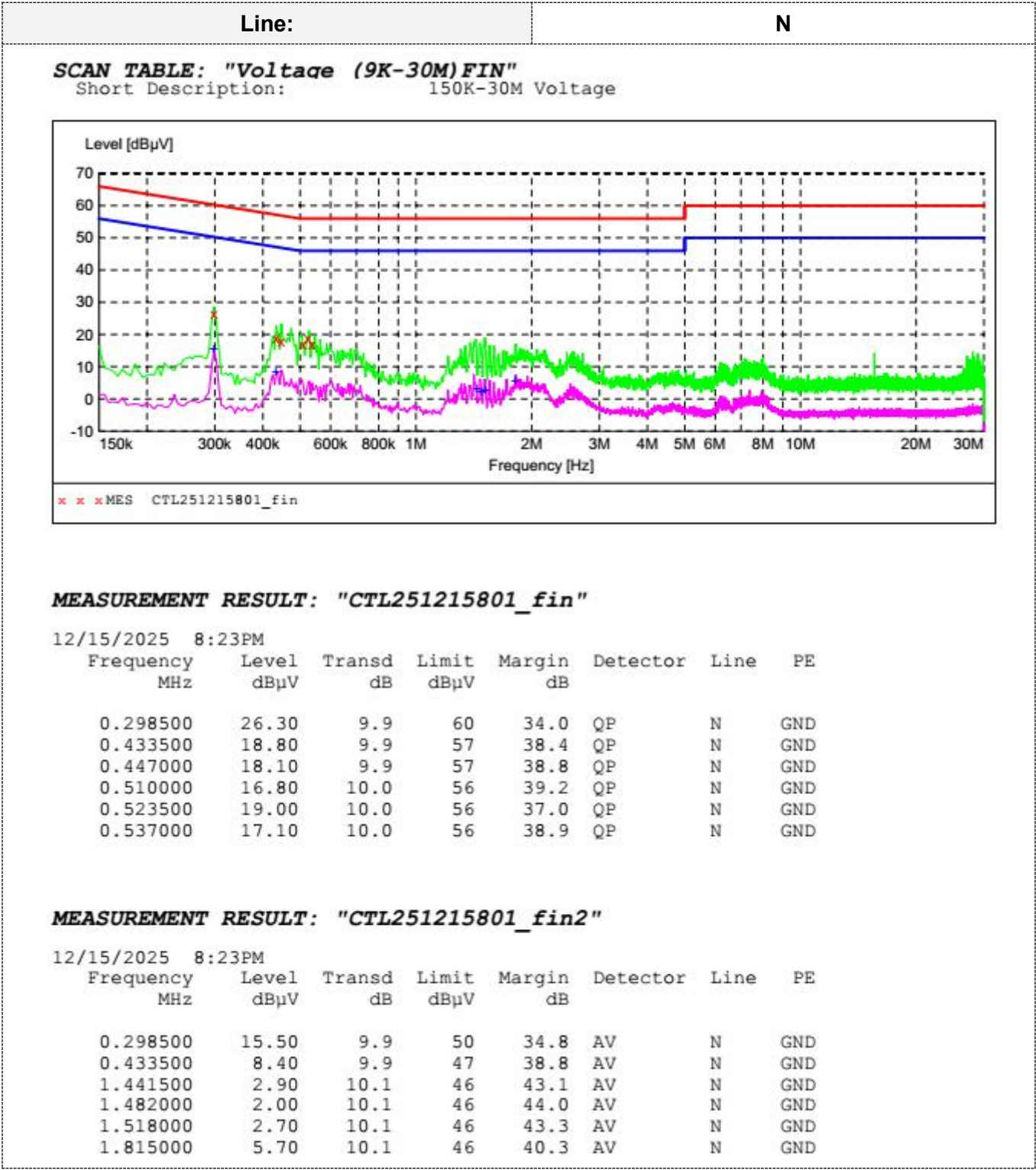
12/15/2025 8:31PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.298500	26.20	9.9	60	34.1	QP	L1	GND
0.474000	17.70	9.9	56	38.7	QP	L1	GND
0.501000	19.20	10.0	56	36.8	QP	L1	GND
1.437000	14.20	10.1	56	41.8	QP	L1	GND
1.446000	12.50	10.1	56	43.5	QP	L1	GND
1.491000	15.50	10.1	56	40.5	QP	L1	GND

MEASUREMENT RESULT: "CTL251215804_fin2"

12/15/2025 8:31PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.298500	15.50	9.9	50	34.8	AV	L1	GND
0.447000	7.90	9.9	47	39.0	AV	L1	GND
1.441500	4.40	10.1	46	41.6	AV	L1	GND
1.477500	4.50	10.1	46	41.5	AV	L1	GND
1.500000	4.20	10.1	46	41.8	AV	L1	GND
1.707000	4.00	10.1	46	42.0	AV	L1	GND



3.2. Radiated Emissions

Limit

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

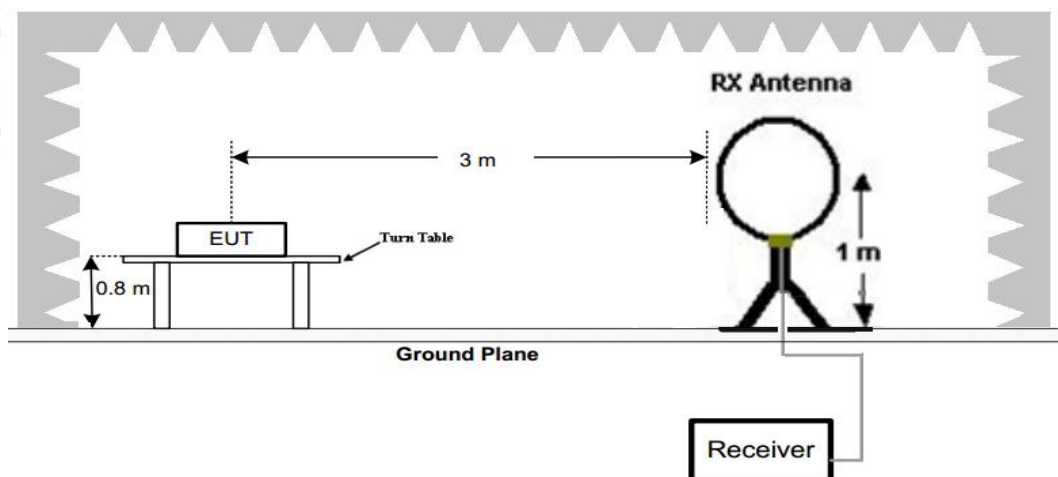
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

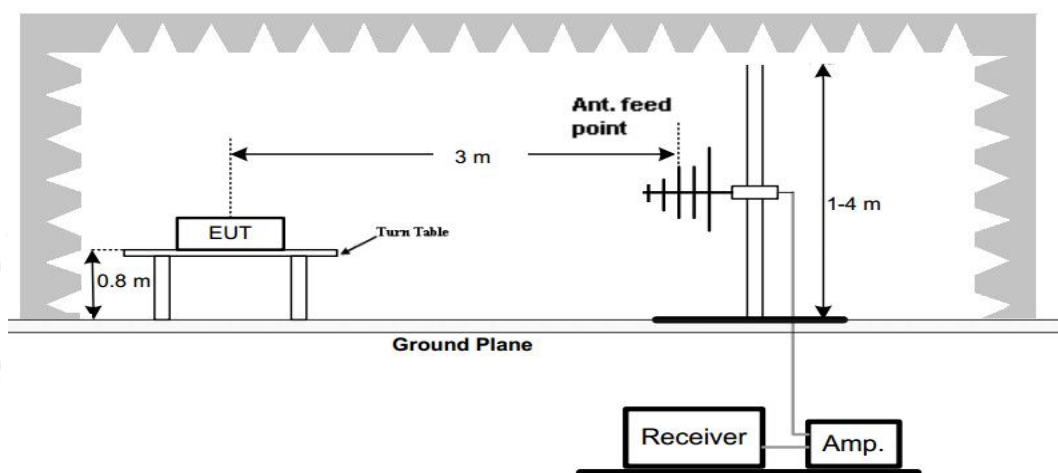
Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	$20\log(2400/F(\text{kHz})) + 40\log(300/3)$	$2400/F(\text{kHz})$
0.49-1.705	3	$20\log(24000/F(\text{kHz})) + 40\log(30/3)$	$24000/F(\text{kHz})$
1.705-30	3	$20\log(30) + 40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST CONFIGURATION

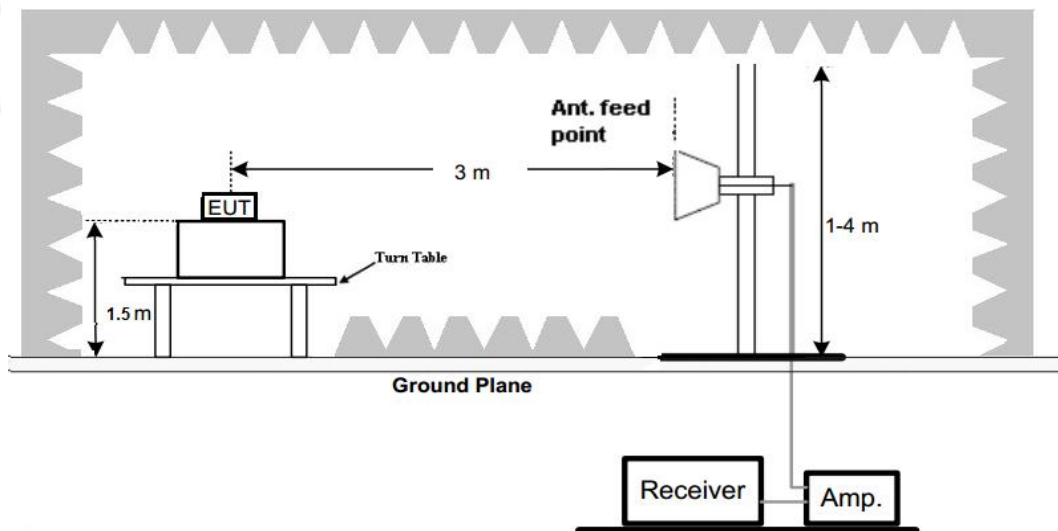
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz

**Test Procedure**

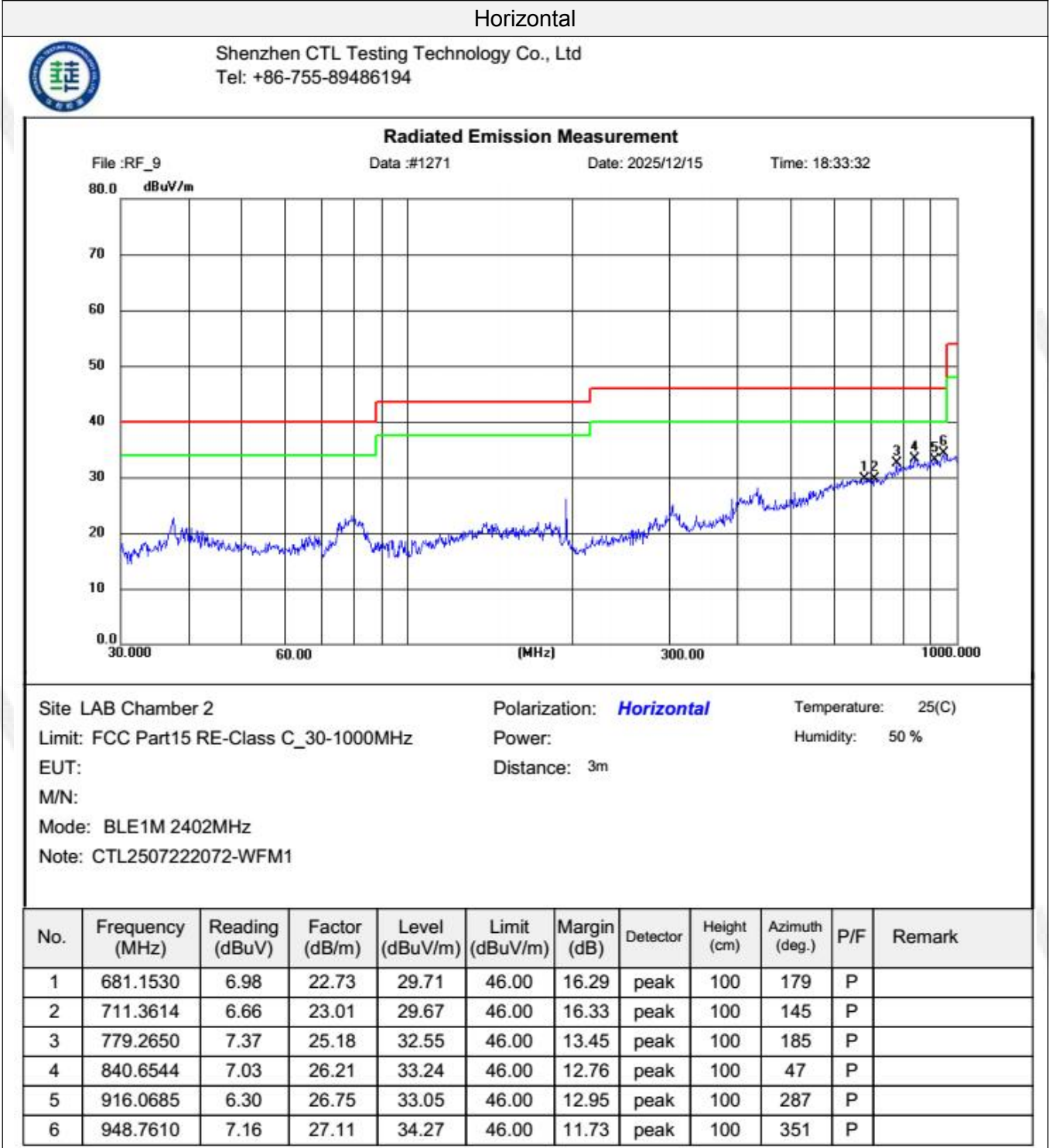
1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

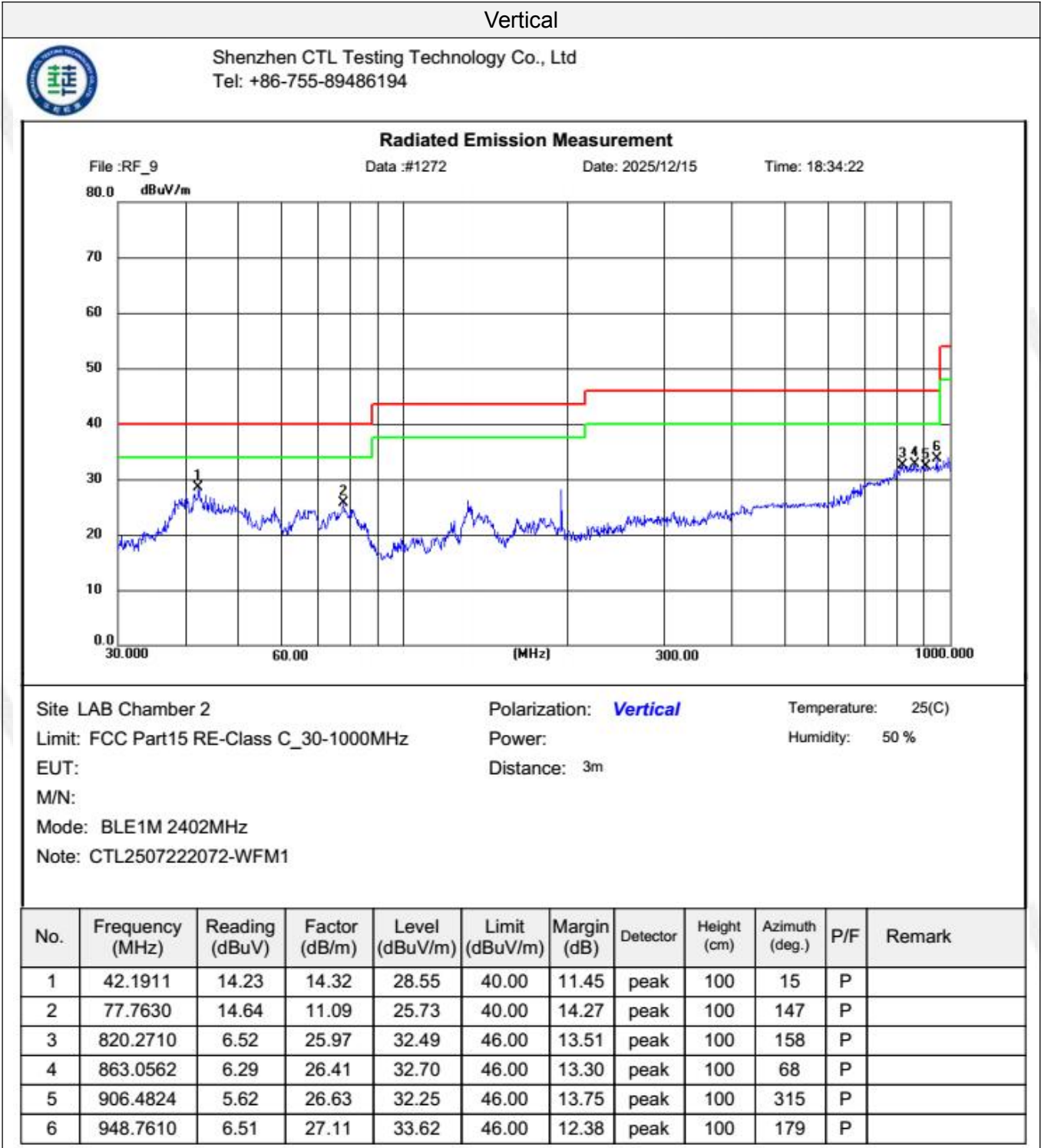
TEST RESULTS

Remark:

1. For below 1GHz testing recorded worst at Bluetooth Low Energy 1M low channel.
2. For above 1GHz testing recorded worst at Bluetooth Low Energy 1M low channel.
3. Radiated emission test from 9 kHz to 10th harmonic of fundamental was verified, Found the emission level are attenuated 20dB below the limits from 9 kHz to 30MHz, so it does not recorded in report.

For 30MHz-1GHz





4. Test Setup Photos of the EUT

Reference to the test report No.CTL2507222072-WF01M1.

5. Photos of the EUT

Reference to the test report No.CTL2507222072-WF01M1.

***** End of Report *****