

# Test Report

**Product:** Automotive Diagnostic Tool

**Trade Mark:** MUCAR, THINKCAR, dollarfix

**Model Number:** VO8

**FCC ID:** 2AUARMVO8

**Prepared for**

THINKCAR TECH CO., LTD.

2606, building 4, phase II, TiananYungu, Gangtou community, Bantian,  
Longgang District, Shenzhen, China

**Prepared by**

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**TEST RESULT CERTIFICATION**

**Applicant's Name**..... : THINKCAR TECH CO., LTD.  
**Address** ..... : 2606, building 4, phase II, TiananYungu, Gangtou community,  
Bantian, Longgang District, Shenzhen, China  
**Manufacturer's Name** ..... : THINKCAR TECH CO., LTD.  
**Address** ..... : 2606, building 4, phase II, TiananYungu, Gangtou community,  
Bantian, Longgang District, Shenzhen, China

**Product description**

**Product name** ..... : Automotive Diagnostic Tool

**Model Number** ..... : VO8

**Standards**..... : FCC Part 15.247

**Test procedure**..... : IEEE/ANSI C63.10-2020

This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

**Date of Test**

**Date (s) of performance of tests**..... : September 14, 2023~September 15, 2023

**Test Result**..... : **Pass**

**Testing Engineer** : Zoe su  
( Z o e S u )

**Technical Manager** : Gary Lu  
( Gary L u )

**Authorized Signatory** : Leo Su  
( L e o S u )





# 1 General Description

## 1.1 Description of EUT

Product name:	Automotive Diagnostic Tool
Model name:	VO8
Series Model:	-
Different of series model:	-
Operation frequency:	BT: 2402-2480MHz, Wi-Fi: 2412-2462MHz
Modulation type:	BLE: GFSK BR+EDR: GFSK, $\pi/4$ -DQPSK, 8DPSK 2.4G Wi-Fi: DBPSK, BPSK, DQPSK, QPSK, 16QAM, 64QAM
Antenna type:	PIFA Antenna
Antenna gain:	0dBi
Hardware version:	V1.0
Software version:	V1.0
Battery:	DC 3.8V 47.88Wh
Power supply:	USB 5V Charging
Adapter information:	-

## 1.2 Test Mode

BLE:

Test Mode	Channel	Frequency (MHz)
1	00	2402
2	19	2440
3	39	2480

BR+EDR:

Test Mode	Channel	Frequency (MHz)
4	00	2402
5	39	2441
6	78	2480

2.4G Wi-Fi(802.11b/802.11g/802.11n(HT20):

Test Mode	Channel	Frequency (MHz)
7	01	2412
8	06	2437
9	11	2462

2.4G Wi-Fi(802.11n(HT40)):

Test Mode	Channel	Frequency (MHz)
10	03	2422
11	06	2437
12	09	2452

**1.3 Operation Channel List**

BLE:

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

BR+EDR:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454	--	--
26	2428	53	2455	--	--

802.11b/g/n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	\	\

802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
03	2422	07	2442
04	2427	08	2447
05	2432	09	2452
06	2437	\	\

**1.4 Test Setup**

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

**1.5 Ancillary Equipment**

Equipment	Model	S/N	Manufacturer
Adapter	HW-100225C00	HC78E2N6A23645	Huawei



## 2 Summary of Test Result

No.	Standard Section	Test Item	Result	Remark
1	15.207	Conducted emission	Pass	
2	15.205/15.209	Spurious emission	Pass	

### 3 Test Facilities and Accreditations

#### 3.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
FCC Registration No.:	CN1341
A2LA Certificate No.:	6765.01

#### 3.2 Environmental Conditions

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

Temperature:	15°C~35°C
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

#### 3.3 Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

Measurement Frequency Range	U, (dB)	Note
Conducted emission(150kHz~30MHz)	$\pm 2.5$ dB	
Radiated emission(30MHz~1GHz)	$\pm 4.2$ dB	
Radiated emission (above 1GHz)	$\pm 4.7$ dB	
Temperature	$\pm 1$ degree	
Humidity	$\pm 5$ %	

#### 3.4 Test Software

Software name	Manufacturer	Model	Version
EMI Measurement	Farad	EZ-EMC	V1.1.4.2
Conducted test system	MWRF-test	MTS 8310	V2.0.0

## 4 List of Test Equipment

Radiation emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E001	Horn Antenna	Schwarzbeck	BBHA 9120D	02592	2022-04-02	2024-04-01
2	HB-E002	Biconical log-periodic composite antenna	Schwarzbeck	VULB 9168	01340	2022-04-06	2024-04-05
3	HB-E003	SHF-EHF Horn	Schwarzbeck	BBHA 91270	01193	2022-04-02	2024-04-01
4	HB-E004	Preamplifier	Noyetec	LAN-0910	NYCM1420101	2023-05-11	2024-05-10
5	HB-E005	Preamplifier	Noyetec	LAN-0118	NYCM1420102	2023-05-12	2024-05-11
6	HB-E006	Preamplifier	Noyetec	LAN-1840	NYCM1420103	2023-06-11	2024-06-10
7	HB-E007	EMI TEST RECEIVER	R&S	ESR7	102520	2023-05-12	2024-05-11
8	HB-E009	POSITINAL COTROLLE R	Noyetec	N/A	N/A	/	/
9	HB-E013	RF switch	Noyetec	NY-RF4	NY0CM1420204	/	/
10	HB-E066	Illuminance Tester	TASI	TA8121	N/A	2023-05-11	2024-05-10
11	HB-E075	Active loop antenna	Schwarzbeck	FMZB 1519B	1519B-245	2022-07-24	2024-07-23
Conduction emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E014	4 Path V-LISN	Schwarzbeck	NNLK 8121	00770	2023-05-12	2024-05-11
2	HB-E015	Pulse Limiter	Schwarzbeck	VTSD 9561-F	00949	2023-05-12	2024-05-11
3	HB-E016	ZN23201	Noyetec	ZN23201	N/A	2023-05-11	2024-05-10
4	HB-E059	Attenuator	Xianghua	TS2-6-1	220215166	2023-05-12	2024-05-11
5	HB-E069	EMI TEST RECEIVER	R&S	ESCI	N/A	2023-05-12	2024-05-11

Note: the calibration interval of the above test instruments is 12&24 months and the calibrations are traceable to international system unit (SI).

## 5 Test Item And Results

### 5.1 Conducted Emission

#### 5.1.1 Limits

Limits – Class B		
Frequency (MHz)	Limit (dB $\mu$ V)	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

Note:

- the tighter limit applies at the band edges.
- the limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

#### 5.1.2 Test Procedures

a) EUT Operating Conditions

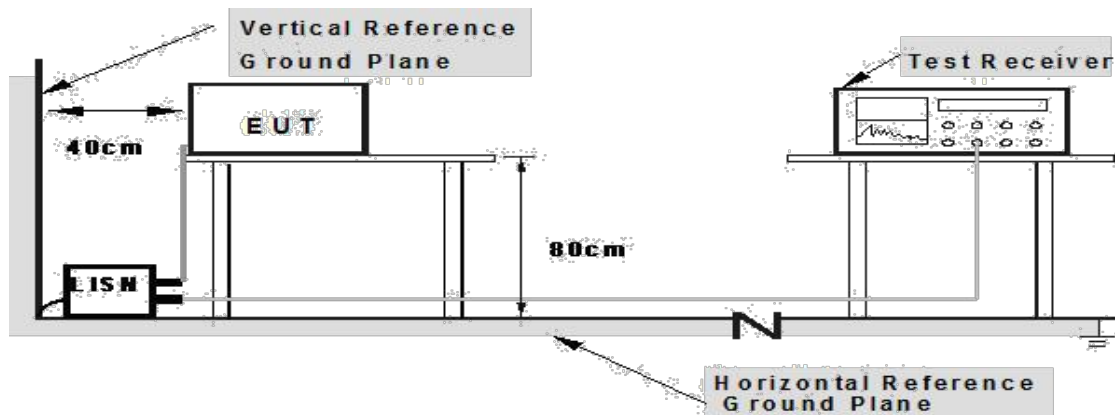
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

b) The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

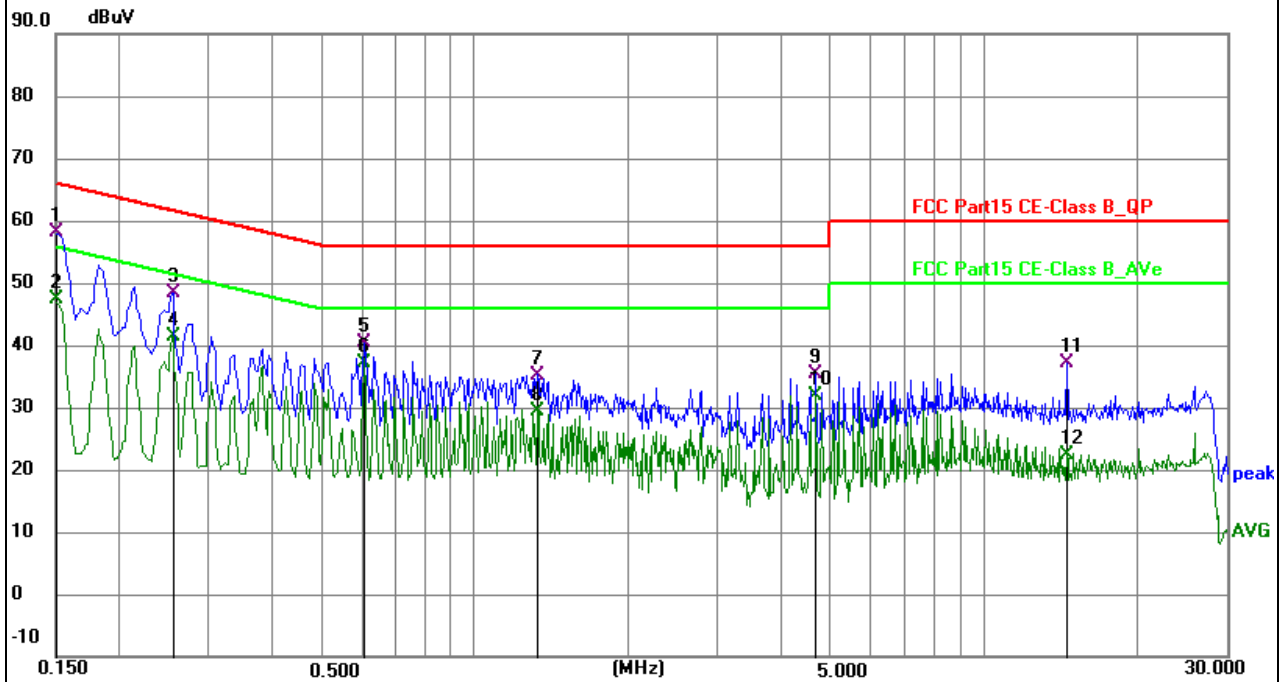
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN is at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item – photographs of the test setup.

### 5.1.3 Test Setup



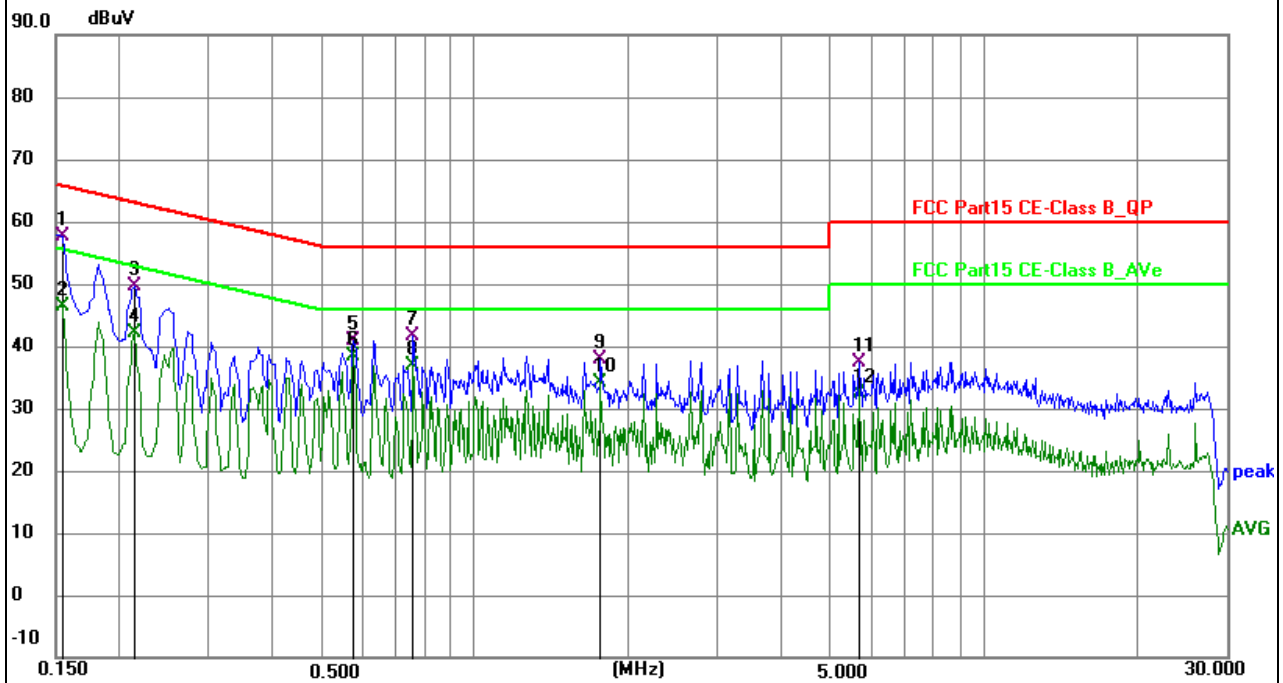
### 5.1.4 Test Result

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM1	Phase :	L
Test Voltage:	AC 120V/60Hz		



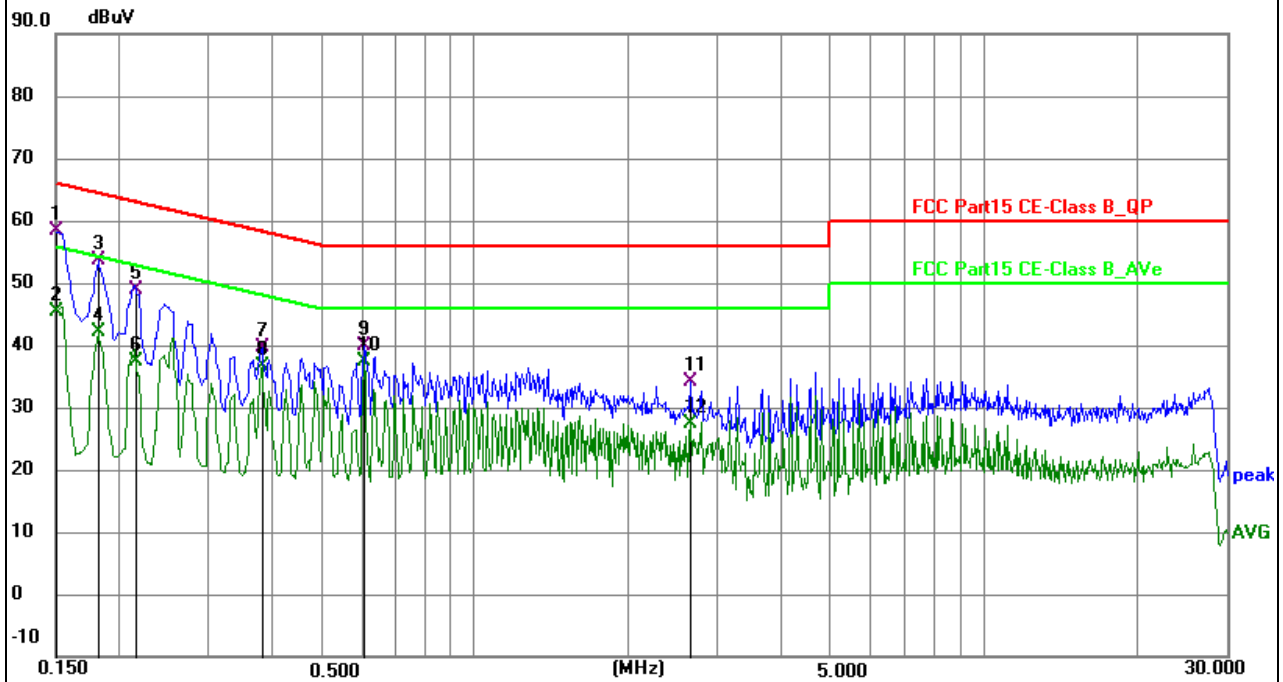
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1500	48.87	9.27	58.14	66.00	-7.86	QP	P	
2	0.1500	38.03	9.27	47.30	56.00	-8.70	AVG	P	
3	0.2535	38.87	9.55	48.42	61.64	-13.22	QP	P	
4	0.2535	31.83	9.55	41.38	51.64	-10.26	AVG	P	
5	0.6045	30.38	9.95	40.33	56.00	-15.67	QP	P	
6	0.6045	27.26	9.95	37.21	46.00	-8.79	AVG	P	
7	1.3290	25.22	10.03	35.25	56.00	-20.75	QP	P	
8	1.3290	19.39	10.03	29.42	46.00	-16.58	AVG	P	
9	4.6770	25.09	10.20	35.29	56.00	-20.71	QP	P	
10	4.6770	21.78	10.20	31.98	46.00	-14.02	AVG	P	
11	14.5365	26.83	10.22	37.05	60.00	-22.95	QP	P	
12	14.5365	12.06	10.22	22.28	50.00	-27.72	AVG	P	

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM1	Phase :	N
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1545	48.29	9.42	57.71	65.75	-8.04	QP	P	
2	0.1545	36.85	9.42	46.27	55.75	-9.48	AVG	P	
3	0.2130	39.99	9.62	49.61	63.09	-13.48	QP	P	
4	0.2130	32.42	9.62	42.04	53.09	-11.05	AVG	P	
5	0.5775	31.05	9.76	40.81	56.00	-15.19	QP	P	
6 *	0.5775	28.58	9.76	38.34	46.00	-7.66	AVG	P	
7	0.7575	32.03	9.63	41.66	56.00	-14.34	QP	P	
8	0.7575	27.32	9.63	36.95	46.00	-9.05	AVG	P	
9	1.7700	27.76	10.04	37.80	56.00	-18.20	QP	P	
10	1.7700	23.98	10.04	34.02	46.00	-11.98	AVG	P	
11	5.6895	27.24	10.23	37.47	60.00	-22.53	QP	P	
12	5.6895	22.05	10.23	32.28	50.00	-17.72	AVG	P	

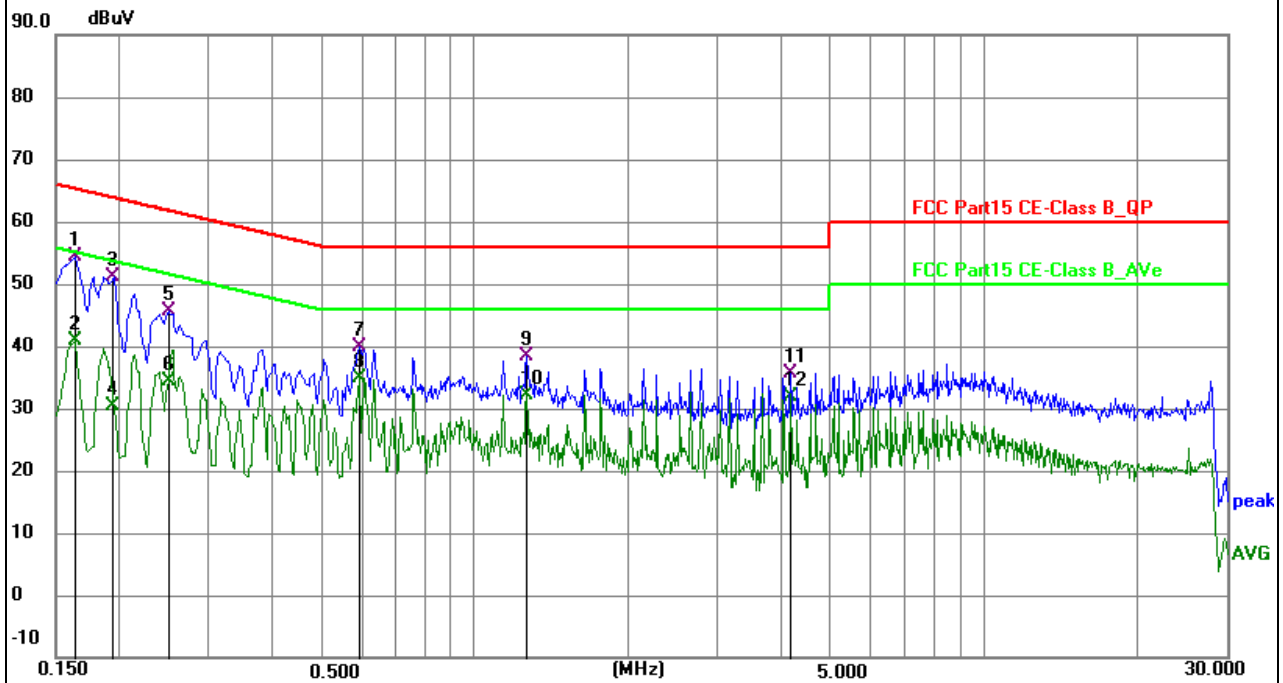
EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM4	Phase :	L
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1500	49.01	9.27	58.28	66.00	-7.72	QP	P	
2	0.1500	36.16	9.27	45.43	56.00	-10.57	AVG	P	
3	0.1815	44.52	9.02	53.54	64.42	-10.88	QP	P	
4	0.1815	33.00	9.02	42.02	54.42	-12.40	AVG	P	
5	0.2151	39.76	9.12	48.88	63.01	-14.13	QP	P	
6	0.2151	28.24	9.12	37.36	53.01	-15.65	AVG	P	
7	0.3795	29.68	9.87	39.55	58.29	-18.74	QP	P	
8	0.3795	26.86	9.87	36.73	48.29	-11.56	AVG	P	
9	0.6045	30.05	9.95	40.00	56.00	-16.00	QP	P	
10	0.6045	27.40	9.95	37.35	46.00	-8.65	AVG	P	
11	2.6565	24.09	10.09	34.18	56.00	-21.82	QP	P	
12	2.6565	17.34	10.09	27.43	46.00	-18.57	AVG	P	

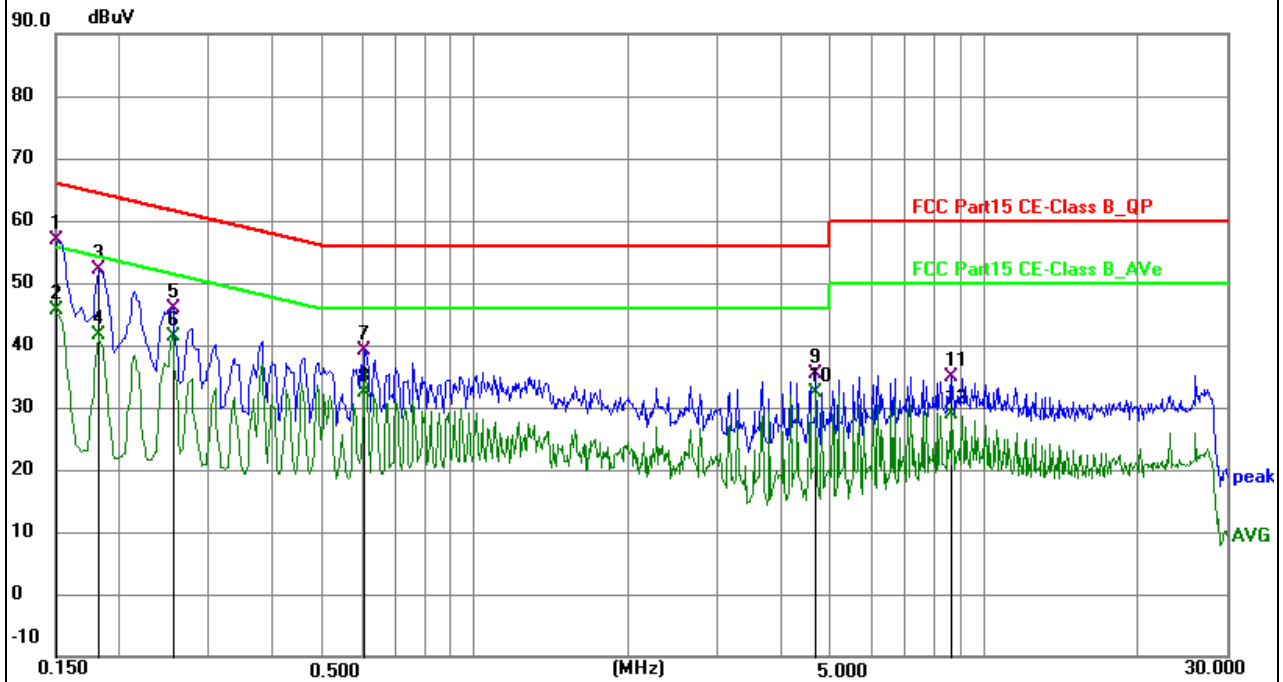


EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM4	Phase :	N
Test Voltage:	AC 120V/60Hz		



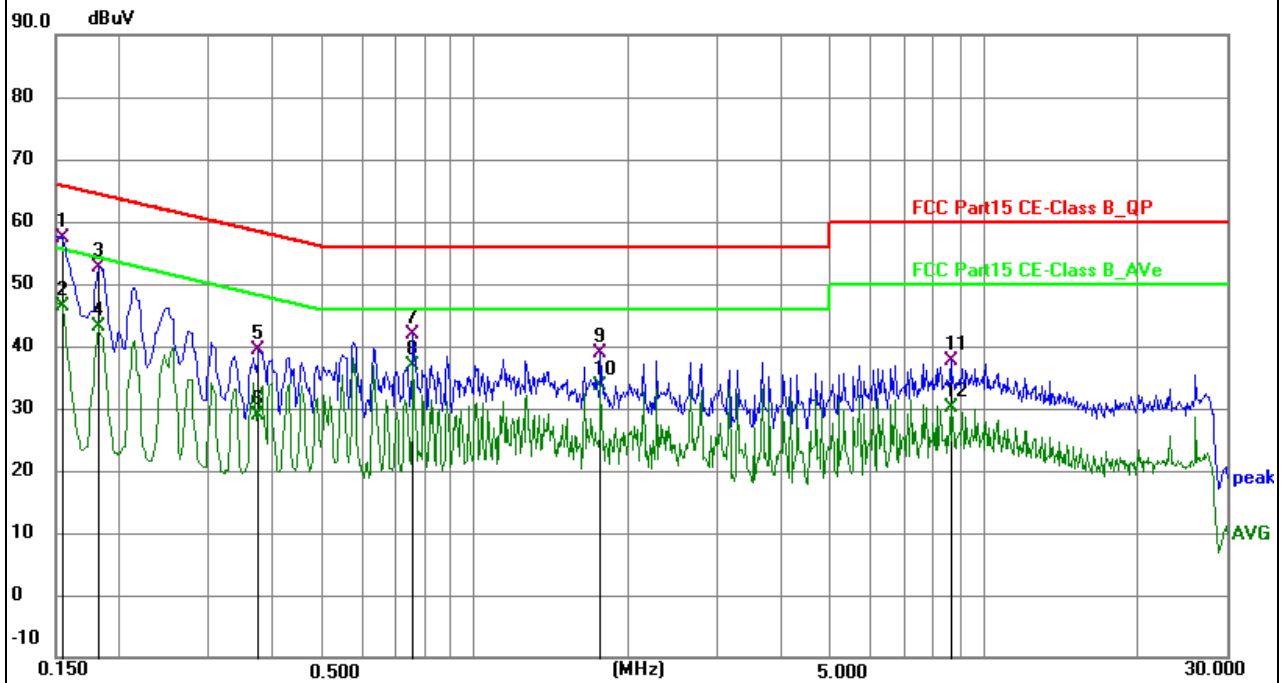
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1635	45.08	9.26	54.34	65.28	-10.94	QP	P	
2	0.1635	31.58	9.26	40.84	55.28	-14.44	AVG	P	
3	0.1949	41.55	9.51	51.06	63.83	-12.77	QP	P	
4	0.1949	20.85	9.51	30.36	53.83	-23.47	AVG	P	
5	0.2490	35.98	9.68	45.66	61.79	-16.13	QP	P	
6	0.2490	24.81	9.68	34.49	51.79	-17.30	AVG	P	
7	0.5910	30.05	9.73	39.78	56.00	-16.22	QP	P	
8	0.5910	25.24	9.73	34.97	46.00	-11.03	AVG	P	
9	1.2660	28.36	10.01	38.37	56.00	-17.63	QP	P	
10	1.2660	22.15	10.01	32.16	46.00	-13.84	AVG	P	
11	4.1730	25.43	10.17	35.60	56.00	-20.40	QP	P	
12	4.1730	21.69	10.17	31.86	46.00	-14.14	AVG	P	

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM7	Phase :	L
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1500	47.57	9.27	56.84	66.00	-9.16	QP	P	
2	0.1500	36.24	9.27	45.51	56.00	-10.49	AVG	P	
3	0.1815	42.99	9.02	52.01	64.42	-12.41	QP	P	
4	0.1815	32.49	9.02	41.51	54.42	-12.91	AVG	P	
5	0.2535	36.37	9.55	45.92	61.64	-15.72	QP	P	
6	0.2535	31.86	9.55	41.41	51.64	-10.23	AVG	P	
7	0.6045	29.08	9.95	39.03	56.00	-16.97	QP	P	
8	0.6045	22.49	9.95	32.44	46.00	-13.56	AVG	P	
9	4.6770	25.15	10.20	35.35	56.00	-20.65	QP	P	
10	4.6770	22.16	10.20	32.36	46.00	-13.64	AVG	P	
11	8.5965	24.65	10.15	34.80	60.00	-25.20	QP	P	
12	8.5965	18.72	10.15	28.87	50.00	-21.13	AVG	P	

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM7	Phase :	N
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1545	48.06	9.42	57.48	65.75	-8.27	QP	P	
2	0.1545	37.07	9.42	46.49	55.75	-9.26	AVG	P	
3	0.1815	43.33	9.32	52.65	64.42	-11.77	QP	P	
4	0.1815	33.83	9.32	43.15	54.42	-11.27	AVG	P	
5	0.3750	29.65	9.65	39.30	58.39	-19.09	QP	P	
6	0.3750	19.33	9.65	28.98	48.39	-19.41	AVG	P	
7	0.7575	32.22	9.63	41.85	56.00	-14.15	QP	P	
8	0.7575	27.21	9.63	36.84	46.00	-9.16	AVG	P	
9	1.7700	28.96	10.04	39.00	56.00	-17.00	QP	P	
10	1.7700	23.69	10.04	33.73	46.00	-12.27	AVG	P	
11	8.5920	27.26	10.25	37.51	60.00	-22.49	QP	P	
12	8.5920	19.99	10.25	30.24	50.00	-19.76	AVG	P	

## 5.2 Radiated Emission

### 5.2.1 Limits

Frequencies (MHz)	Field Strength (micровolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

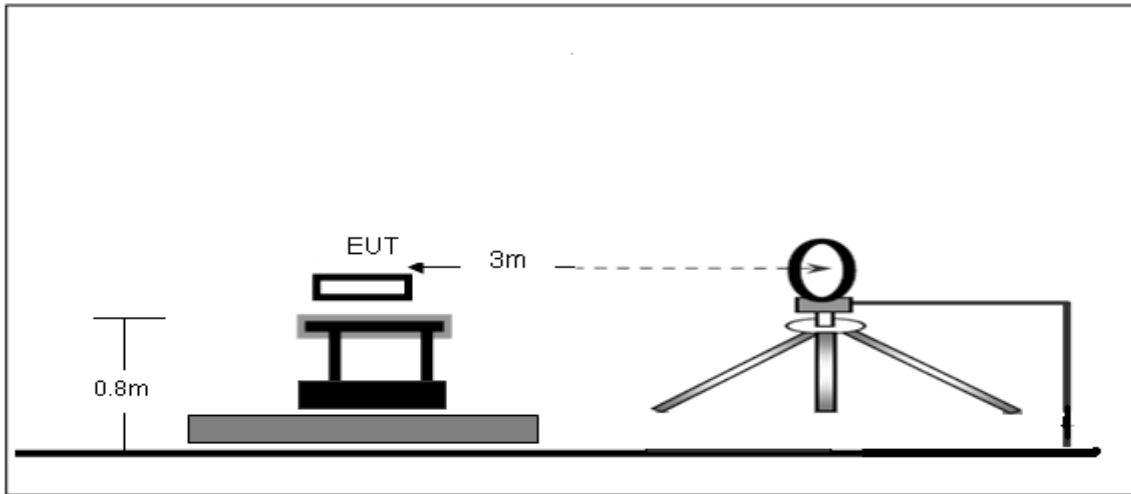
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

### 5.2.2 Test Procedures

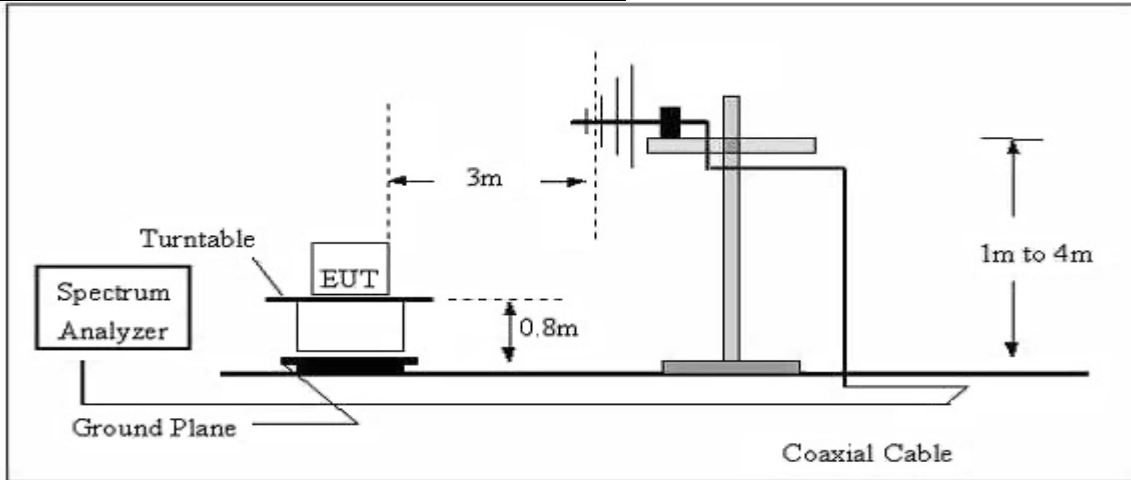
- a) The radiated emission tests were performed in the 3 meters.
- b) The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- c) The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d) If the peak mode measured value compliance with and lower than quasi peak mode limit, the EUT shall be deemed to meet QP limits and then no additional QP mode measurement performed.
- e) If the peak mode measured value compliance with and lower than average mode limit, the EUT shall be deemed to meet average limits and then no additional average mode measurement performed.
- f) For the actual test configuration, please refer to the related item – EUT test photos.

### 5.2.3 Test Setup

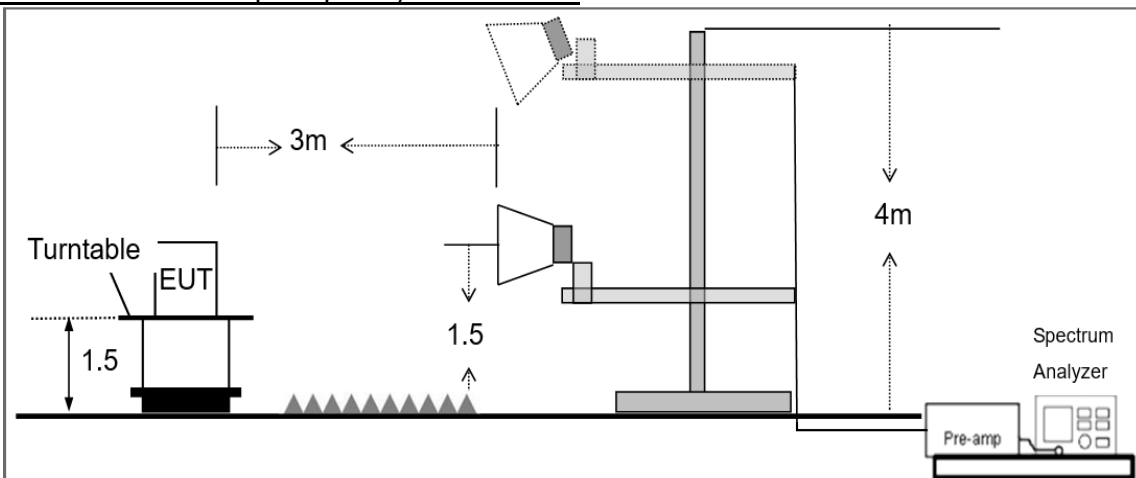
Radiated Emission Test-Up Frequency Below 30MHz



Radiated Emission Test-Up Frequency 30MHz~1GHz



Radiated emission test-up frequency above 1GHz



**5.2.4 Test Result**

Below 30MHz

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Pressure:	1010 hPa	Test Voltage:	DC 3.8V
Test Mode:	TM1	Polarization:	--

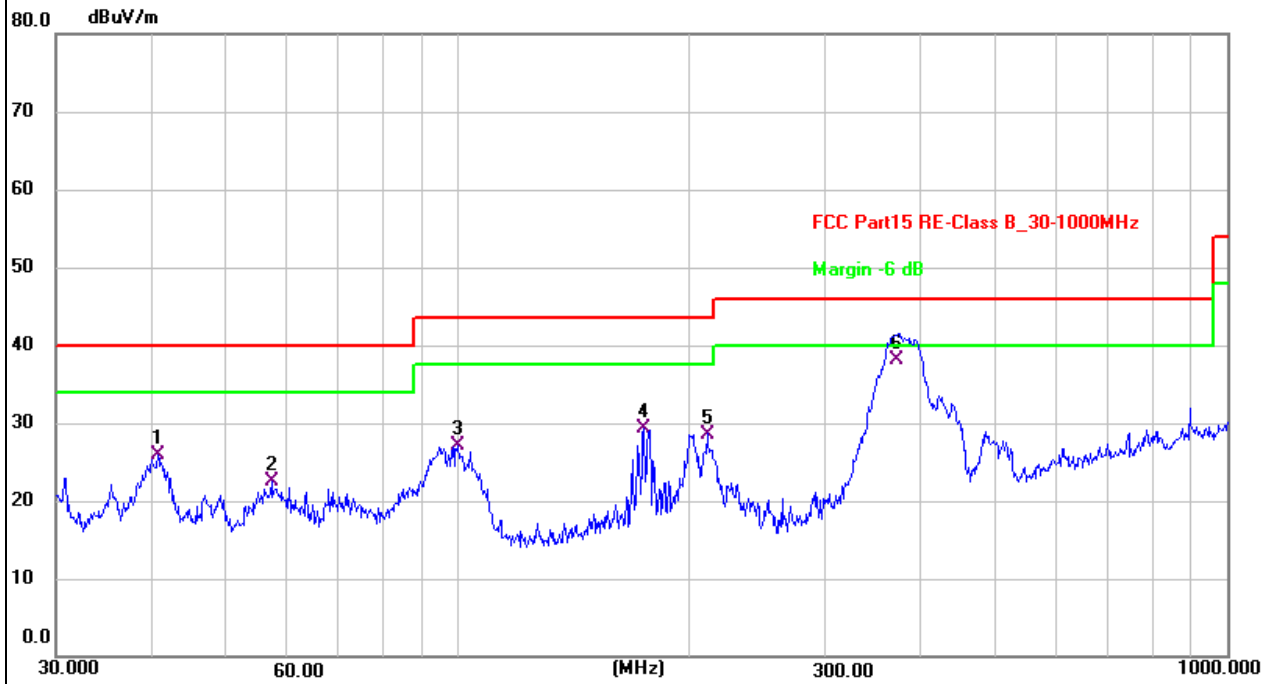
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	Pass
--	--	--	--	Pass

Note:

1. For 9kHz-30MHz, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})$ (dB);
3. Limit line = specific limits (dBuV) + distance extrapolation factor.

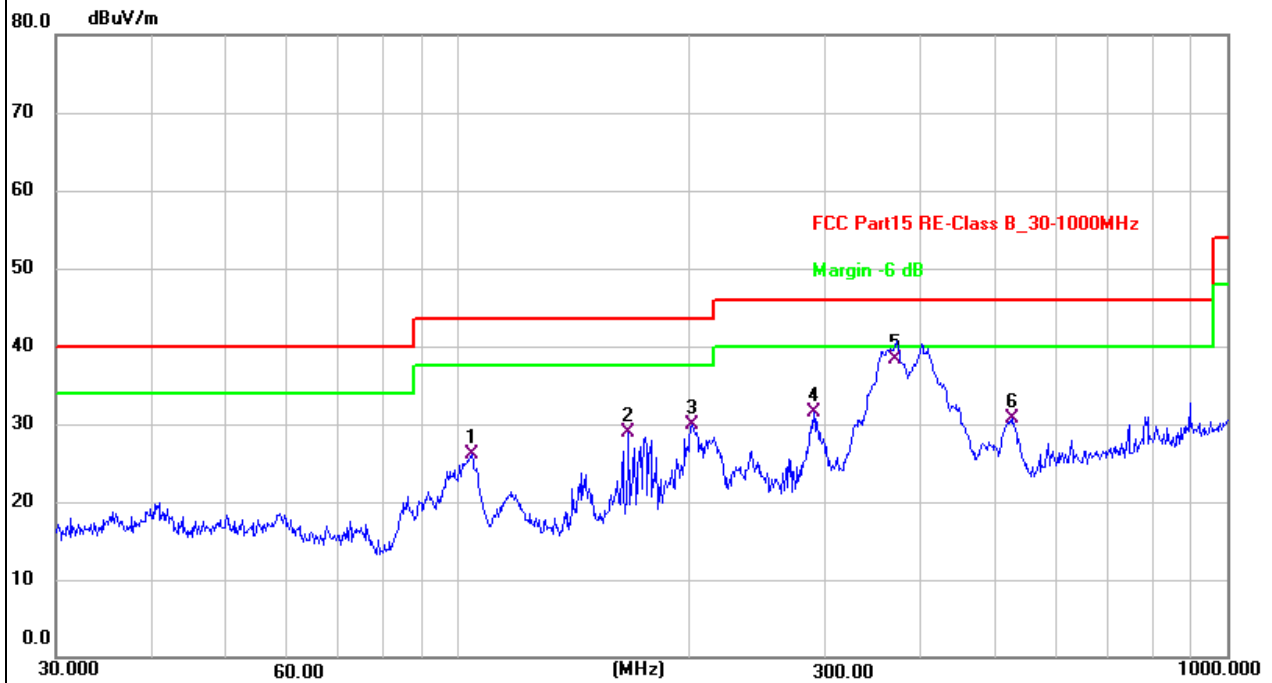
30MHz – 1GHz

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM1	Phase :	Vertical
Test Voltage:	DC 3.8V		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	40.7016	34.11	-8.27	25.84	40.00	-14.16	QP	100	52	P	
2	57.1914	32.06	-9.58	22.48	40.00	-17.52	QP	100	11	P	
3	99.8777	39.68	-12.67	27.01	43.50	-16.49	QP	100	354	P	
4	174.4241	39.39	-10.14	29.25	43.50	-14.25	QP	100	11	P	
5	210.7860	40.23	-11.63	28.60	43.50	-14.90	QP	100	11	P	
6 *	372.5162	45.03	-6.99	38.04	46.00	-7.96	QP	100	0	P	

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM1	Phase :	Horizontal
Test Voltage:	DC 3.8V		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	104.1701	38.35	-12.33	26.02	43.50	-17.48	QP	199	348	P	
2	166.6514	38.42	-9.44	28.98	43.50	-14.52	QP	199	113	P	
3	201.3930	41.81	-11.99	29.82	43.50	-13.68	QP	199	21	P	
4	290.0172	40.13	-8.59	31.54	46.00	-14.46	QP	100	12	P	
5 *	369.8045	45.30	-7.05	38.25	46.00	-7.75	QP	100	64	P	
6	526.3967	33.91	-3.15	30.76	46.00	-15.24	QP	199	348	P	

Note:

1. Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor.
2. All the modulation modes have been tested, and only the worst results are reflected in the report.



Below 30MHz

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Pressure:	1010 hPa	Test Voltage:	DC 3.8V
Test Mode:	TM4	Polarization:	--

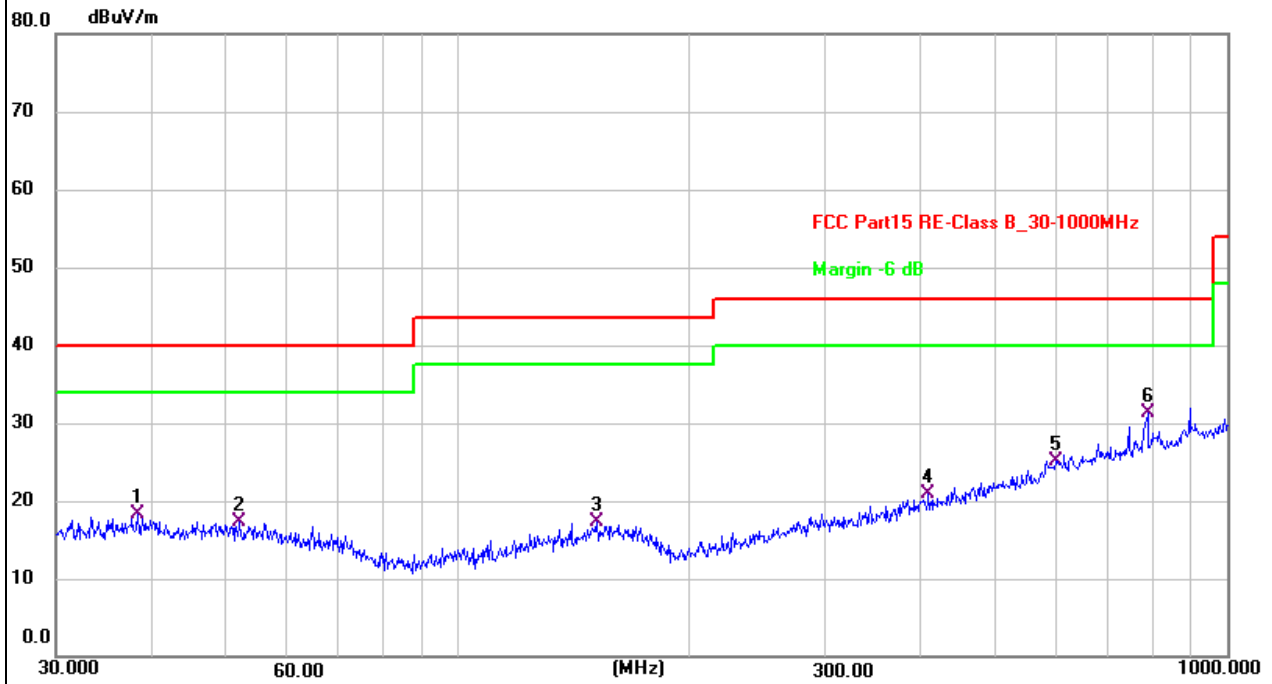
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	Pass
--	--	--	--	Pass

Note:

1. For 9kHz-30MHz, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor =  $40 \log(\text{specific distance}/\text{test distance})$ (dB);
3. Limit line = specific limits (dBuV) + distance extrapolation factor.

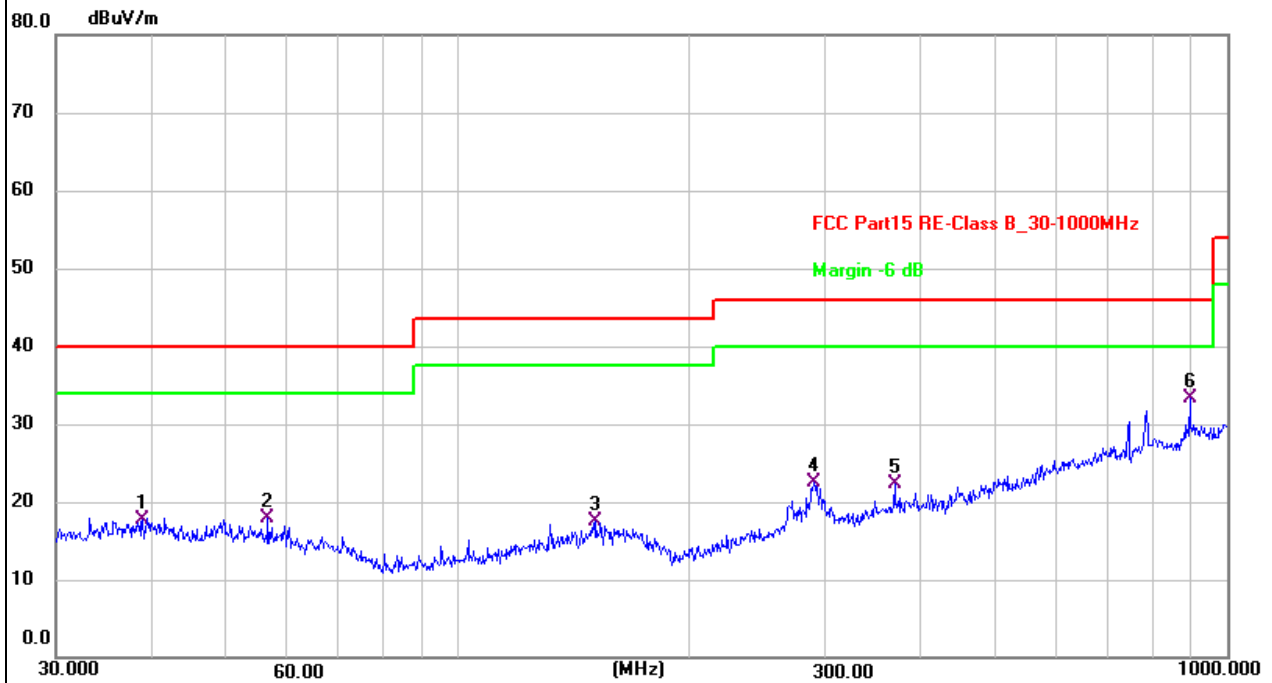
30MHz – 1GHz

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM4	Phase :	Vertical
Test Voltage:	DC 3.8V		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	38.3462	26.56	-8.35	18.21	40.00	-21.79	QP	100	358	P	
2	52.0251	26.20	-8.97	17.23	40.00	-22.77	QP	100	11	P	
3	151.5972	26.14	-8.78	17.36	43.50	-26.14	QP	100	11	P	
4	408.9460	26.70	-5.77	20.93	46.00	-25.07	QP	100	53	P	
5	599.3212	26.24	-1.04	25.20	46.00	-20.80	QP	100	350	P	
6 *	787.8513	29.20	2.07	31.27	46.00	-14.73	QP	100	218	P	

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM4	Phase :	Horizontal
Test Voltage:	DC 3.8V		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	38.8878	25.94	-8.26	17.68	40.00	-22.32	QP	100	40	P	
2	56.5929	27.37	-9.51	17.86	40.00	-22.14	QP	100	81	P	
3	151.0666	26.35	-8.76	17.59	43.50	-25.91	QP	100	348	P	
4	290.0172	31.08	-8.59	22.49	46.00	-23.51	QP	100	348	P	
5	369.4047	29.35	-7.07	22.28	46.00	-23.72	QP	100	348	P	
6 *	893.8567	29.78	3.61	33.39	46.00	-12.61	QP	100	1	P	

Note:

1. Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor.
2. All the modulation modes have been tested, and only the worst results are reflected in the report.

Below 30MHz

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Pressure:	1010 hPa	Test Voltage:	DC 3.8V
Test Mode:	TM7	Polarization:	--

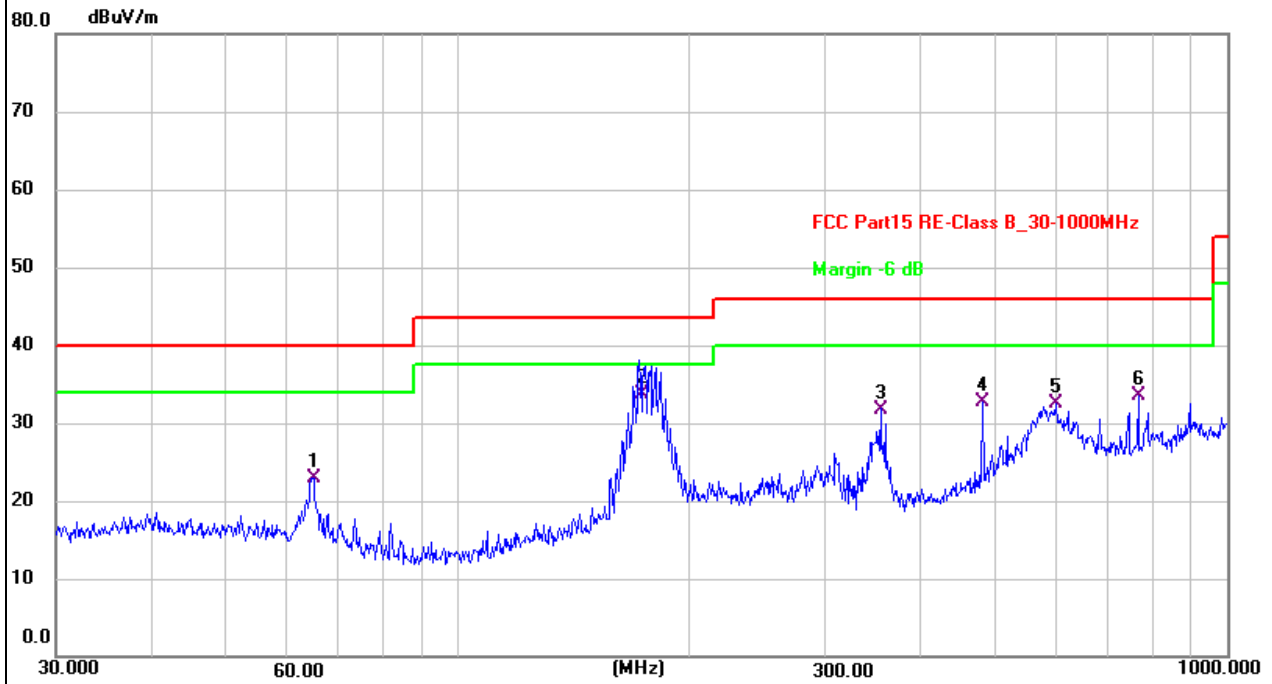
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	Pass
--	--	--	--	Pass

Note:

1. For 9kHz-30MHz, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor =  $40 \log(\text{specific distance}/\text{test distance})$ (dB);
3. Limit line = specific limits (dBuV) + distance extrapolation factor.

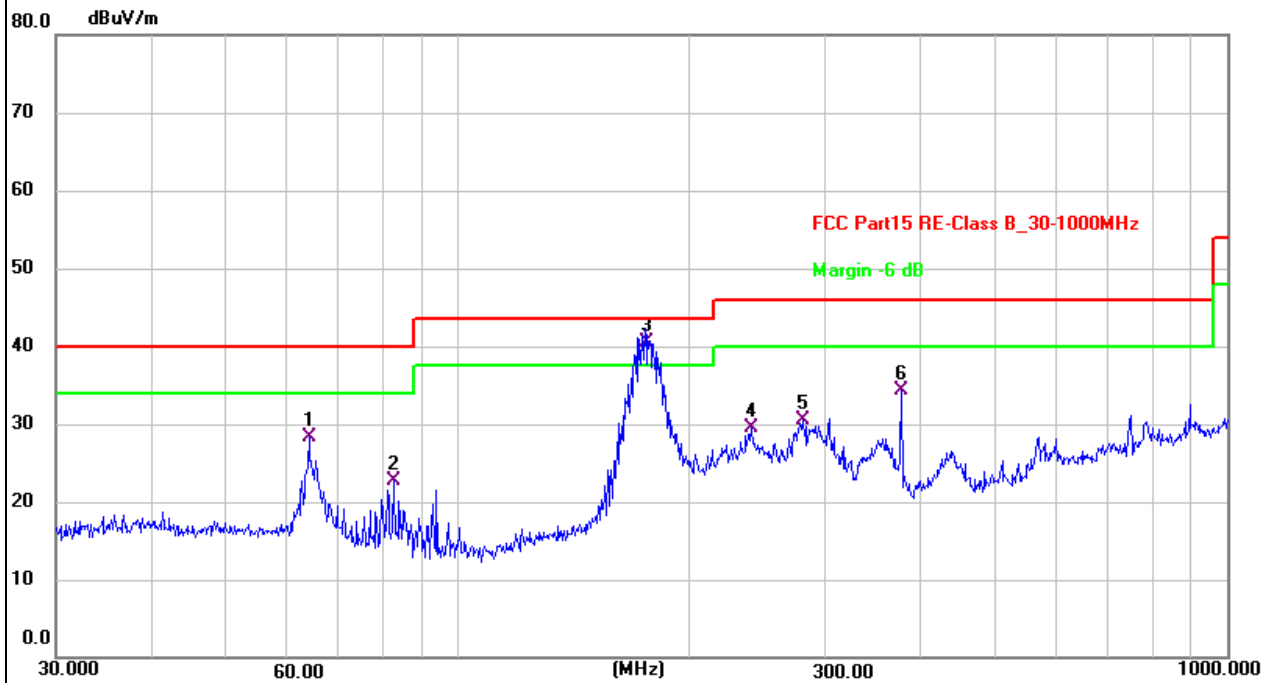
30MHz – 1GHz

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM7	Phase :	Vertical
Test Voltage:	DC 3.8V		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	64.8865	33.34	-10.43	22.91	40.00	-17.09	QP	100	76	P	
2 *	173.5296	43.84	-10.04	33.80	43.50	-9.70	QP	100	180	P	
3	354.1831	39.25	-7.45	31.80	46.00	-14.20	QP	100	10	P	
4	480.5276	36.92	-4.31	32.61	46.00	-13.39	QP	100	10	P	
5	599.3212	33.51	-1.04	32.47	46.00	-13.53	QP	100	21	P	
6	766.0571	32.15	1.36	33.51	46.00	-12.49	QP	100	239	P	

EUT:	Automotive Diagnostic Tool	Model Name:	VO8
Test Mode:	TM7	Phase :	Horizontal
Test Voltage:	DC 3.8V		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	63.9827	38.54	-10.33	28.21	40.00	-11.79	QP	199	12	P	
2	82.3588	36.17	-13.41	22.76	40.00	-17.24	QP	199	12	P	
3 *	176.5067	50.80	-10.34	40.46	43.50	-3.04	QP	199	43	P	
4	240.8303	39.48	-9.95	29.53	46.00	-16.47	QP	100	91	P	
5	281.0074	39.28	-8.82	30.46	46.00	-15.54	QP	100	50	P	
6	377.2590	41.02	-6.80	34.22	46.00	-11.78	QP	199	12	P	

Note:

1. Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor.
2. All the modulation modes have been tested, and only the worst results are reflected in the report.

## **Photographs of the Test Setup**

Reference to the appendix Test Setup Photos for details.

## Photographs of the EUT

Reference to the appendix External Photos and Internal Photos for details.

**\*\*\*\*\* END OF REPORT \*\*\*\*\***