

Radio TEST Report

FCC ID: PPQ-VN910F

This report concerns (check one) : Original Grant Class II Change

Issued Date : Apr. 09, 2007

Project No. : 0703108

Equipment : GPS Navigation

Model Name : VN910

Applicant : LITE-ON Technology Corp

Address : 6F, No. 9, Lane 768, Sec. 4, Pateh Rd.
Taipei Taiwan, R.O.C.

Tested by:

Neutron Engineering Inc. EMC Laboratory

Data of Test:

Mar. 26, 2007 ~ May. 21, 2007

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Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents	Page
1 . CERTIFICATION	5
2 . SUMMARY OF TEST RESULTS	6
2.1 TEST FACILITY	7
2.2 MEASUREMENT UNCERTAINTY	7
3 . GENERAL INFORMATION	8
3.1 GENERAL DESCRIPTION OF EUT	8
3.2 DESCRIPTION OF TEST MODES	10
3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
3.4 DESCRIPTION OF SUPPORT UNITS	12
4 . EMC EMISSION TEST	13
4.1 CONDUCTED EMISSION MEASUREMENT	13
4.1.1 POWER LINE CONDUCTED EMISSION LIMITS	13
4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING	13
4.1.3 TEST PROCEDURE	14
4.1.4 DEVIATION FROM TEST STANDARD	14
4.1.5 TEST SETUP	14
4.1.6 EUT OPERATING CONDITIONS	14
4.1.7 TEST RESULTS	15
4.2 RADIATED EMISSION MEASUREMENT	17
4.2.1 RADIATED EMISSION LIMITS	17
4.2.2 MEASUREMENT INSTRUMENTS LIST	18
4.2.3 TEST PROCEDURE	18
4.2.4 DEVIATION FROM TEST STANDARD	18
4.2.5 TEST SETUP	19
4.2.6 EUT OPERATING CONDITIONS	20
4.2.7 TEST RESULTS	21
4.3 BAND EDGE EMISSIONS MEASUREMENT	33
4.3.1 LIMITS OF BAND EDGE EMISSIONS MEASUREMENT	33
4.3.2 MEASURING INSTRUMENTS AND SETTING	33
4.3.3 TEST PROCEDURE	33
4.3.4 TEST SETUP LAYOUT	33
4.3.5 TEST DEVIATION	33
4.2.6 TEST RESULTS	34
5 . BANDWIDTH REQUIREMENT	42
5.1.1 LIMITS OF EMISSION BAND MEASUREMENT	42
5.1.2 MEASUREMENT INSTRUMENTS LIST	42
5.1.3 TEST PROCEDURE	42

Table of Contents	Page
5.1.4 TEST SETUP LAYOUT	42
5.1.5 TEST DEVIATION	42
5.1.6 EUT OPERATION DURING TEST	42
5.1.7 TEST RESULT OF 20dB SPECTRUM BANDWIDTH	43
6 . EUT TEST PHOTO	47

1. CERTIFICATION

Equipment: GPS Navigation
Trade Name: Liteon
Model Name: VN910
Applicant: LITEON-ON Technology Corp
Data of Test: Mar. 26, 2007 ~ May. 21, 2007
Test Item: ENGINEERING SAMPLE
Standards: FCC Part15, Subpart C (15.239)/ ANCI C63.4 : 2003

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-0703108) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and CNLA according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: (Antenna to EUT distance is 3 m)

FCC Part15, Subpart C				
Standard	Test Item	Limit	Frequency Range (MHz)	Judgment
15.207	Conducted Emission	Class B	0.15 - 30	PASS
15.209	Radiated Emission	Class B	30-1000	PASS
15.239	Radiated Emission	250 μ V/m (48dB μ V/m) @ 3m	88~108	PASS

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **CO01/OS02** at the location of No.132-1, Lane 329, Sec. 2, Palain Road, Shijr City, Taipei, Taiwan.

2.2 MEASUREMENT UNCERTAINTY

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

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
OS-01	ANSI	30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
OS-02	ANSI	30MHz ~ 200MHz	V	2.48	
		30MHz ~ 200MHz	H	2.16	
		200MHz ~ 1,000MHz	V	2.50	
		200MHz ~ 1,000MHz	H	2.66	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	GPS Navigation	
Trade Name	Liteon	
Model Name.	VN910	
OEM Brand/Model No.	N/A	
Model Difference	N/A	
Product Description	The EUT is a. GPS Navigation	
	A. Operation Frequency	Please refer to Note 2.
	B. Modulation Type	FM
	C. Equipment Type	I (Transfer of messages)
	D. Channel Separation	200 KHz
	E. Antenna Designation	Integrated antenna(FM antenna)
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Power Source	DC Voltage supplied from AC ADAPTER / CAR CHARGE Battery supplied.	
Power Rating	AC ADAPTER: AC I/P 100-240V 50/60Hz 0.15A , DC O/P +5.0V 1.0A. CAR CHARGE I/P10-30VDC 0.85A O/P +5.0V 1.2A. Battery: DC 3.7V (LI-ION)	
Connecting I/O Port(s)	Please refer to the User's Manual	
Products Covered	AC ADAPTER: P005WA05KK CAR CHARGE:F2A/AC250V(UL) Battery: 20-01649-01A0651-02568	
EUT Modification(s)	N/A	

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Frequency Band	Channel No.	Frequency
88~108MHz	1	88.1 MHz
	2	88.3 MHz
	:	:
	50	97.9 MHz
	51	98.1 MHz
	52	98.3 MHz
	:	:
	99	107.7 MHz
	100	107.9 MHz

3. able for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Cirocomm	DA15	PATCH	U.FL	-0.5
2	Cirocomm	GBA-203	PATCH	U.FL	-0.5

* EUT is a multi function with FM transmitter, and GPS radio functions.
Only the radio detail of GPS Navigation is shown in the table below. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Test Mode	Description
Mode 1	TX 88.1MHz/98.1MHz/107.9MHz (Adapter)(Stereo mode)
Mode 2	TX 88.1MHz/98.1MHz/107.9MHz (Car Charger) (Stereo mode)
Mode 3	TX 88.1MHz/98.1MHz/107.9MHz (Adapter)(Mono mode)
Mode 4	TX 88.1MHz/98.1MHz/107.9MHz (Car Charger)(Mono mode)

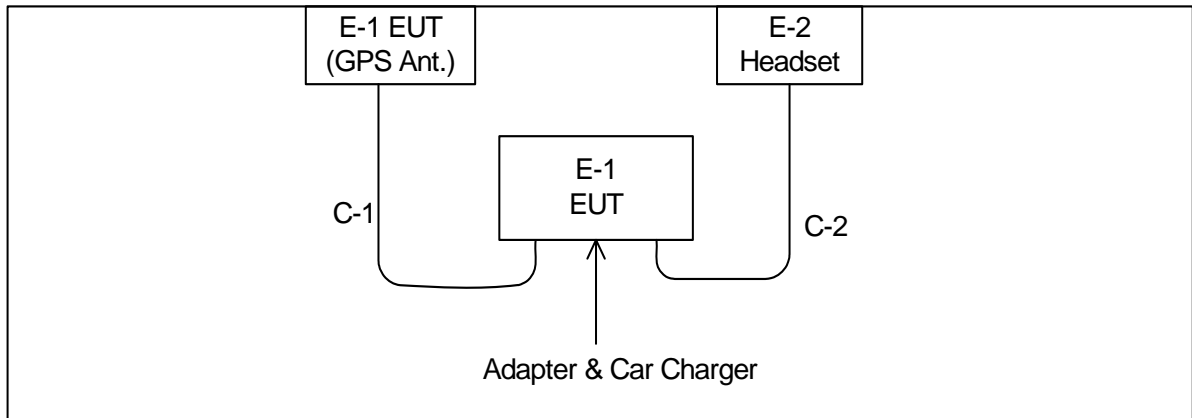
For Conducted Test	
Final Test Mode	Description
Mode 1	TX 88.1MHz (Adapter) Normal Link

For Radiated Test	
Final Test Mode	Description
Mode 1	TX 88.1MHz/98.1MHz/107.9MHz (Adapter) (Stereo mode)
Mode 2	TX 88.1MHz/98.1MHz/107.9MHz (Car Charger) (Stereo mode)

Test Items	Mode	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	51	1
Field Strength of Fundamental Emissions 20dB Spectrum Bandwidth	CTX of Z Axis	1/51/100	1
Radiated Emissions 9kHz~30MHz	CTX of Z Axis	51	1
Radiated Emissions 30MHz~10 th Harmonic	CTX of Z Axis	1/51/100	1
Band Edge Emissions	CTX of Z Axis	1/100	1

There are four modes TX Stereo/TX Mono mode with car charge/adaptor at lower ,middle ,highest channel , the Stereo Mode is the worst case for spurious emissions and band-edge worst case are different Stereo mode & Mono mode

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



C-1 Ant. Cable
C-2 Audio Cable

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	GPS Navigation	Liteon	VN910	PPQ-VN910F	N/A	EUT
E-2	Headset	Ergotech	ETE221	N/A	4719405002095	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	N/A	2.0	GPS ANT.
C-2	N/A	N/A	1.8	Earphone

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBUV)		Class B (dBUV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Notes:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	Rolf Heine	NNB-2/16Z	98053	Dec. 18, 2007
2	Pulse Limiter	Electro-Metrics	EM-7600	112644	Nov. 28, 2007
3	Test Cable	N/A	C01	N/A	Nov. 28, 2007
4	EMI Test Receiver	R&S	ESCI	100082	Mar. 08, 2008

Remark: " N/A" denotes No Model Name , Serial No. or No Calibration specified.

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

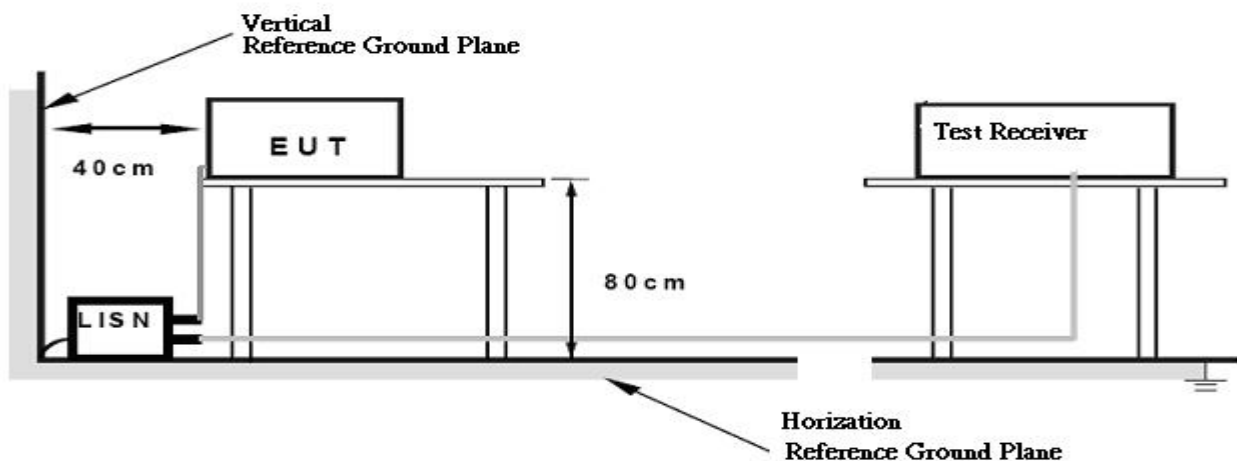
4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



4.1.6 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.

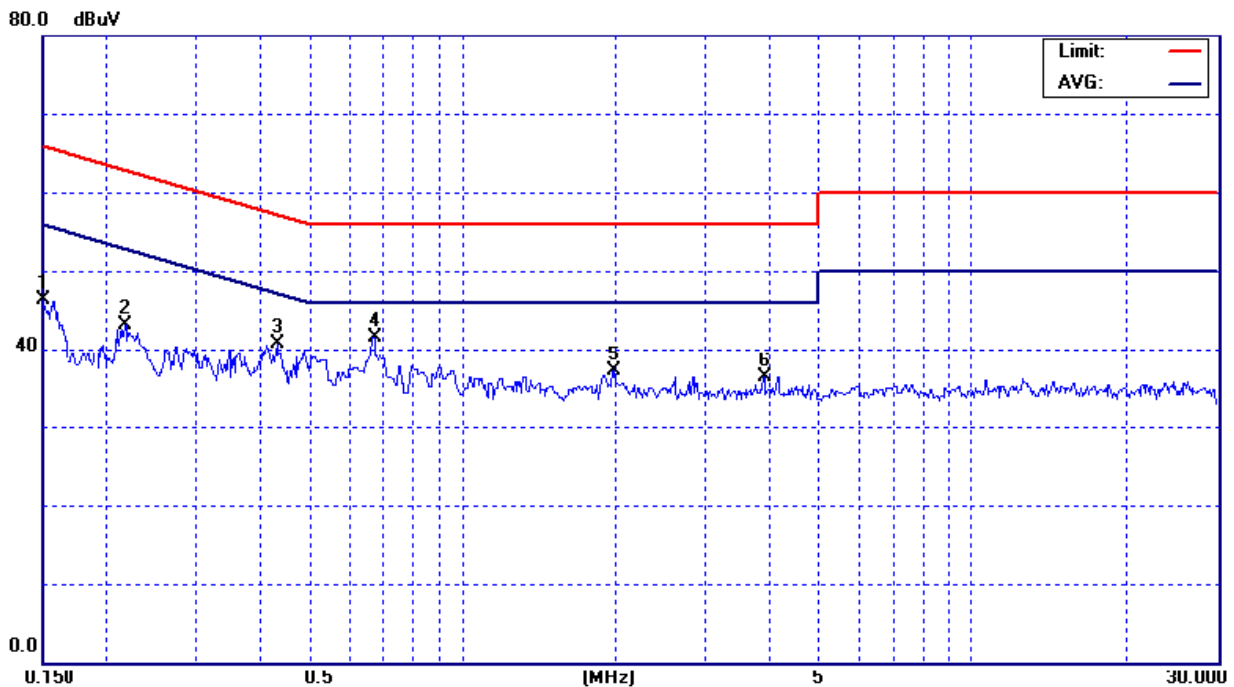
4.1.7 TEST RESULTS

EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode1_TX 88.1MHz (Adapter) Normal Link		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.15	Line	46.27	*	66.00	56.00	-19.73	(QP)
0.22	Line	43.04	*	62.88	52.88	-19.84	(QP)
0.43	Line	40.69	*	57.21	47.21	-16.52	(QP)
0.67	Line	41.47	*	56.00	46.00	-14.53	(QP)
1.97	Line	37.02	*	56.00	46.00	-18.98	(QP)
3.91	Line	36.34	*	56.00	46.00	-19.66	(QP)

Remark

- (1) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a "*" marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.

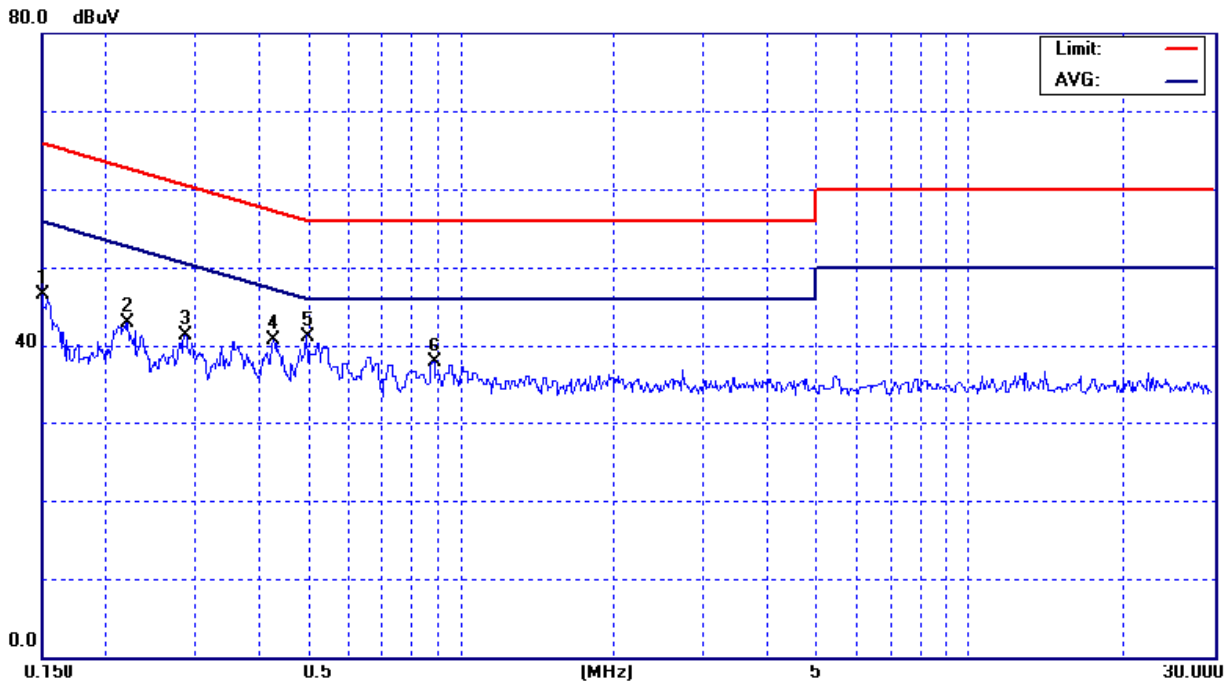


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode1_TX 88.1MHz (Adapter) Normal Link		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.15	Neutral	46.57	*	66.00	56.00	-19.43	(QP)
0.22	Neutral	42.94	*	62.78	52.78	-19.84	(QP)
0.29	Neutral	41.29	*	60.63	50.63	-19.34	(QP)
0.43	Neutral	40.79	*	57.31	47.31	-16.52	(QP)
0.50	Neutral	41.20	*	56.05	46.05	-14.85	(QP)
0.89	Neutral	37.74	*	56.00	46.00	-18.26	(QP)

Remark

- (1) All readings are QP Mode value unless otherwise stated AVG in column of Note. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a "*" marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz-1000MHz)

According to 15.239 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
88 to 108	67.96	47.96

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/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

As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Notes:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).
- (3) A measuring distance of 3m is a primary used. However, either 3m or 10m (instead of 10m) distance may be allowed. If the distance is 3m, add 10dB to the QP-limit above. If the distance is 10m, subtract 10dB from the QP-limit above.

4.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	VULB 9160	3058	Nov. 28, 2007
2	Test Cable	N/A	10M_OS02	N/A	Nov. 28, 2007
3	Test Cable	N/A	OS02-1/-2/-3	N/A	Nov. 28, 2007
4	Pre-Amplifier	Anritsu	MH648A	M09961	Nov. 28, 2007
5	EMI Test Receiver	R&S	ESCI	100082	Feb. 01, 2007
6	Antenna Mast	Chance Most	CMTB-1.5	N/A	N/A
7	Turn Table	Chance Most	CMTB-1.5	N/A	N/A
8	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007
9	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-325	Oct. 25, 2007
10	Horn Antenna	Schwarzbeck	BBHA9170	9170187	Oct. 25, 2007

Remark: " N/A" denotes No Model Name / Serial No. and No Calibration specified.

4.2.3 TEST PROCEDURE

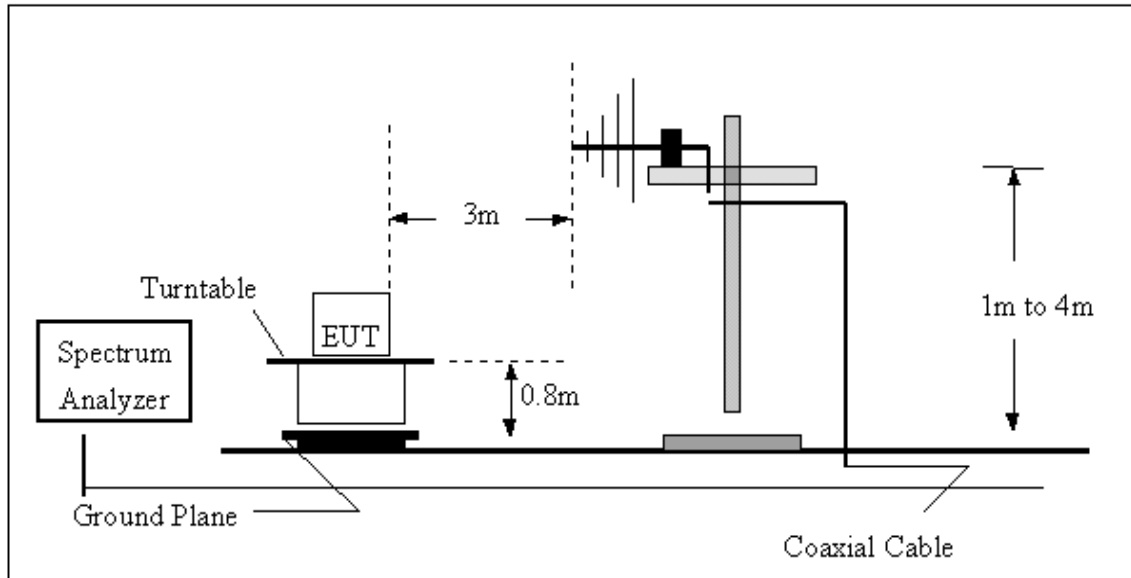
- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. 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.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

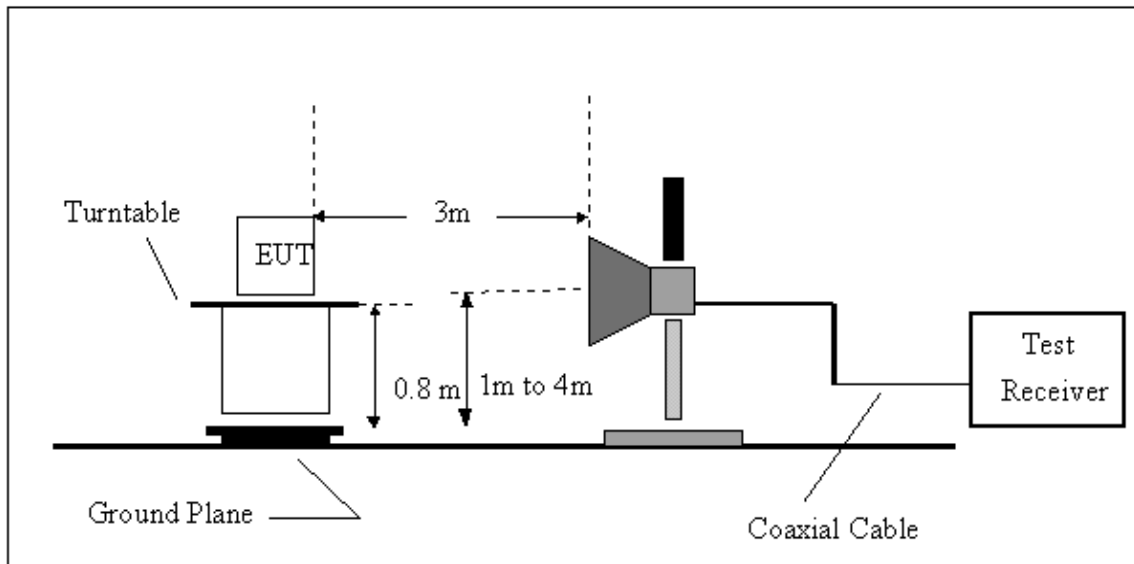
No deviation

4.2.5 TEST SETUP

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



4.2.6 EUT OPERATING CONDITIONS

- (a) Only radiated testing was performed during the max. EMI emission evaluation. Conducted testing excepted because of the EUT is a battery operating device and no any other cable connection to Notebook device.

- (b) 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.

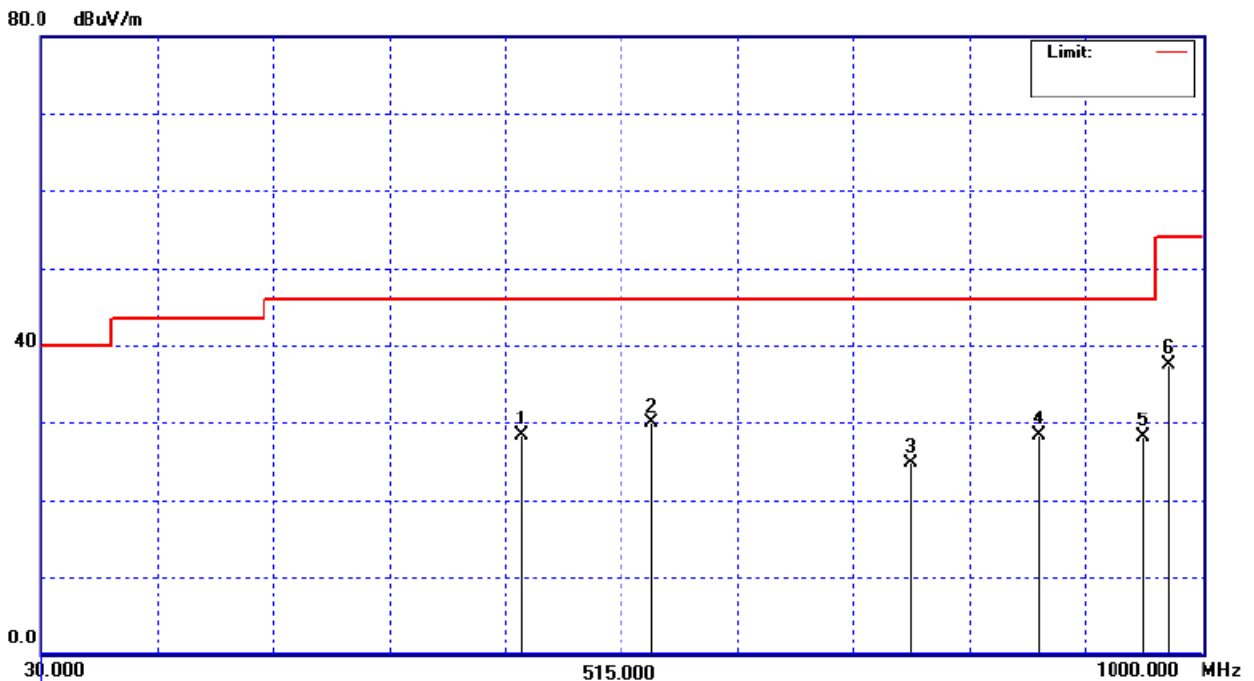
4.2.7 TEST RESULTS

EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 1_TX 88.1MHz (Adapter)(Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
431.58	V	46.99	-18.73	28.26	46.00	- 17.74	(QP)
540.22	V	46.52	-16.65	29.87	46.00	- 16.13	(QP)
757.50	V	33.62	-8.93	24.69	46.00	- 21.31	(QP)
864.20	V	35.43	-7.13	28.30	46.00	- 17.70	(QP)
951.50	V	33.34	-5.33	28.01	46.00	- 17.99	(QP)
972.84	V	42.44	-4.94	37.50	54.00	- 16.50	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz .
- (2) All readings are Peak unless otherwise stated QP in column of 『Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (3) Measuring frequency range from 30MHz to 1000MHz .
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table .

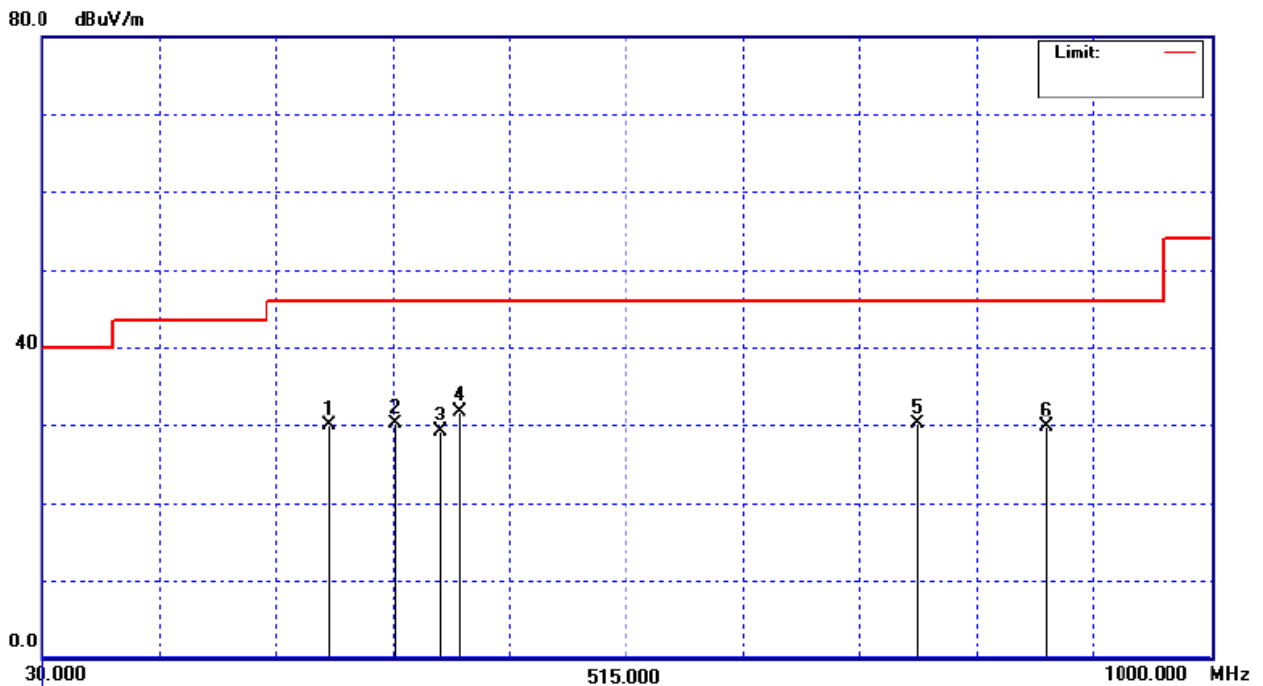


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 1_TX 88.1MHz (Adapter) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
268.62	H	53.54	-23.62	29.92	46.00	- 16.08	(QP)
322.94	H	52.17	-22.01	30.16	46.00	- 15.84	(QP)
359.80	H	50.30	-21.14	29.16	46.00	- 16.84	(QP)
377.26	H	52.34	-20.59	31.75	46.00	- 14.25	(QP)
757.50	H	39.08	-8.93	30.15	46.00	- 15.85	(QP)
864.20	H	36.88	-7.13	29.75	46.00	- 16.25	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦



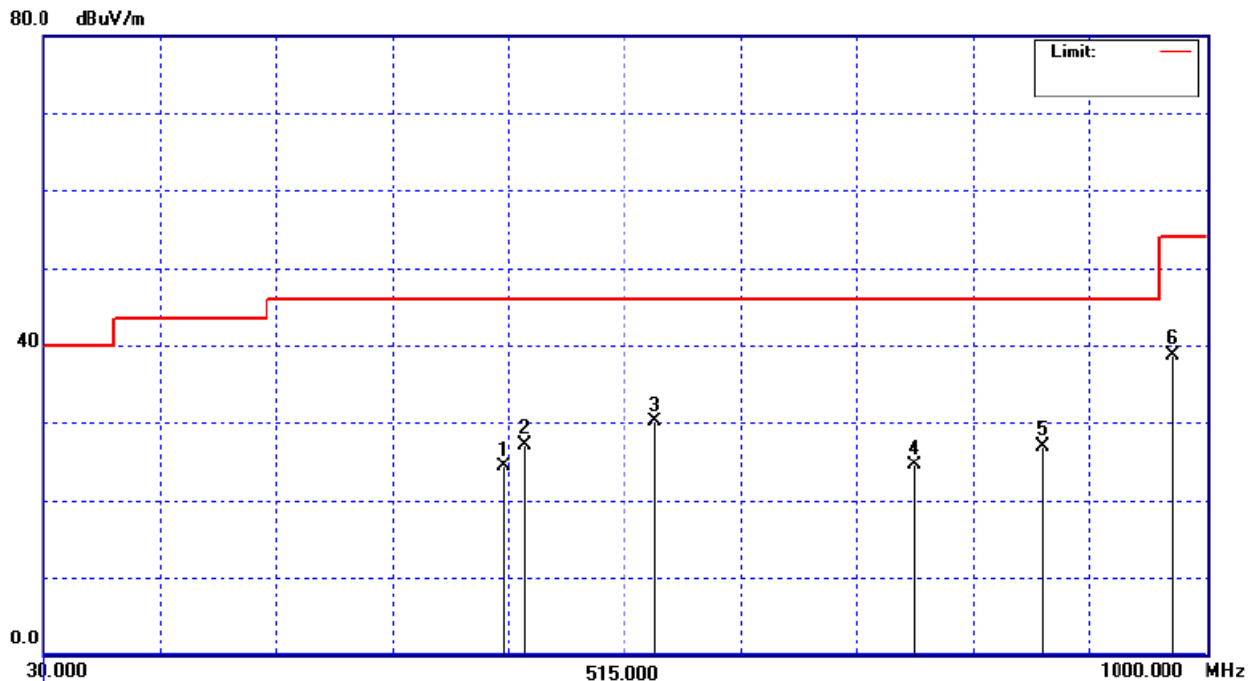
EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %

Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 1_TX 98.1MHz (Adapter) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
414.12	V	43.64	-19.30	24.34	46.00	- 21.66	(QP)
431.58	V	45.90	-18.73	27.17	46.00	- 18.83	(QP)
540.22	V	46.79	-16.65	30.14	46.00	- 15.86	(QP)
757.50	V	33.39	-8.93	24.46	46.00	- 21.54	(QP)
864.20	V	34.12	-7.13	26.99	46.00	- 19.01	(QP)
972.84	V	43.55	-4.94	38.61	54.00	- 15.39	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

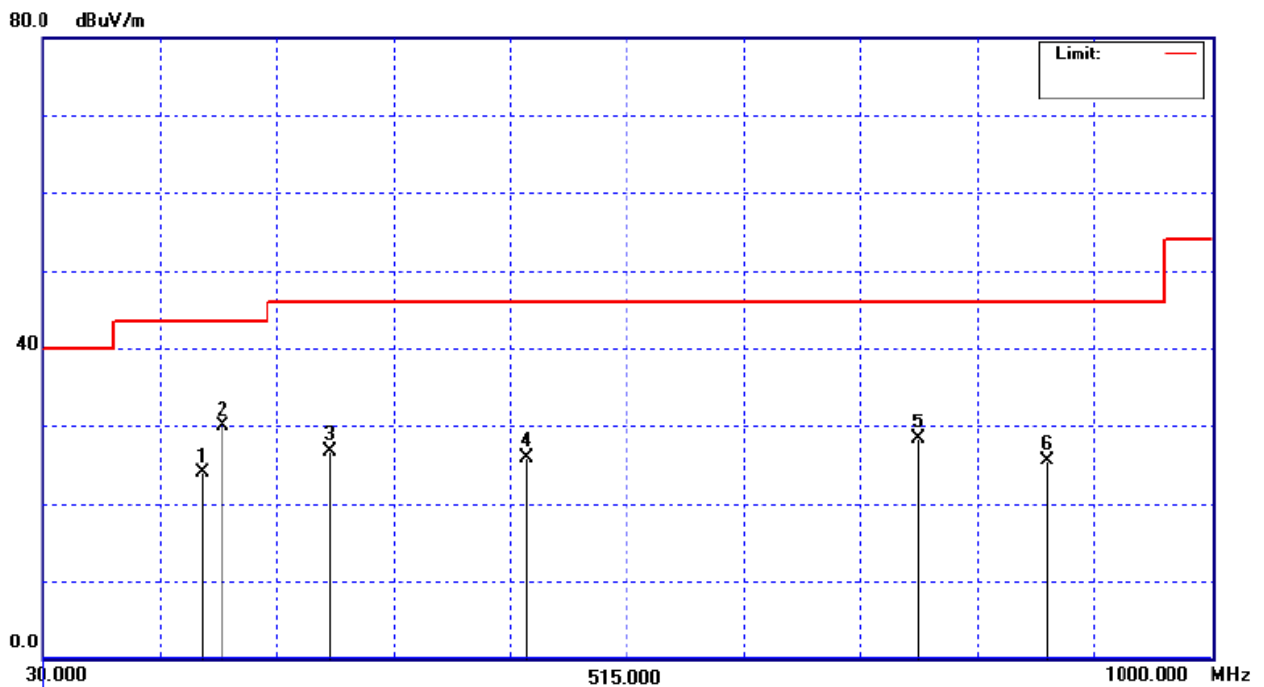


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 1_TX 98.1MHz (Adapter) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
161.92	H	46.92	-22.94	23.98	43.50	- 19.52	(QP)
179.38	H	54.01	-24.08	29.93	43.50	- 13.57	(QP)
268.62	H	50.31	-23.62	26.69	46.00	- 19.31	(QP)
431.58	H	44.59	-18.73	25.86	46.00	- 20.14	(QP)
757.50	H	37.20	-8.93	28.27	46.00	- 17.73	(QP)
864.20	H	32.63	-7.13	25.50	46.00	- 20.50	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz .
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (3) Measuring frequency range from 30MHz to 1000MHz .
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table .



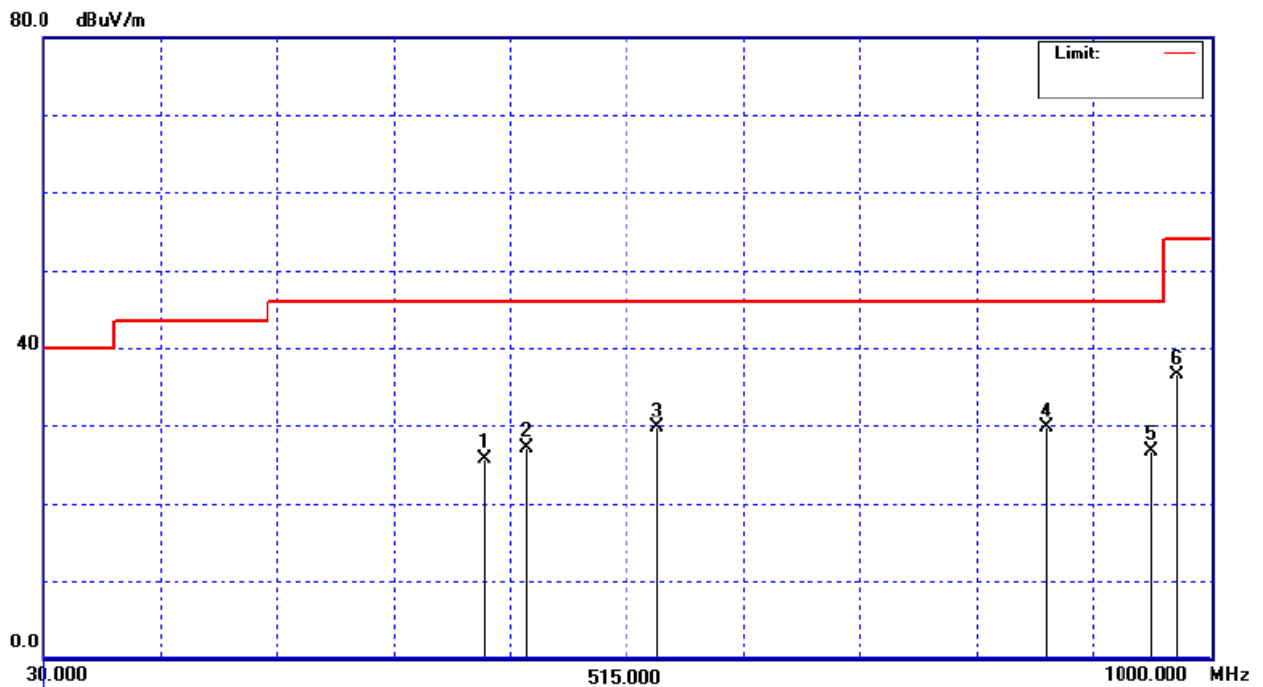
EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %

Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 1_TX 107.9MHz (Adapter) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
396.66	V	45.45	-19.83	25.62	46.00	- 20.38	(QP)
431.58	V	45.81	-18.73	27.08	46.00	- 18.92	(QP)
540.22	V	46.32	-16.65	29.67	46.00	- 16.33	(QP)
864.20	V	36.88	-7.13	29.75	46.00	- 16.25	(QP)
951.50	V	31.99	-5.33	26.66	46.00	- 19.34	(QP)
972.84	V	41.45	-4.94	36.51	54.00	- 17.49	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

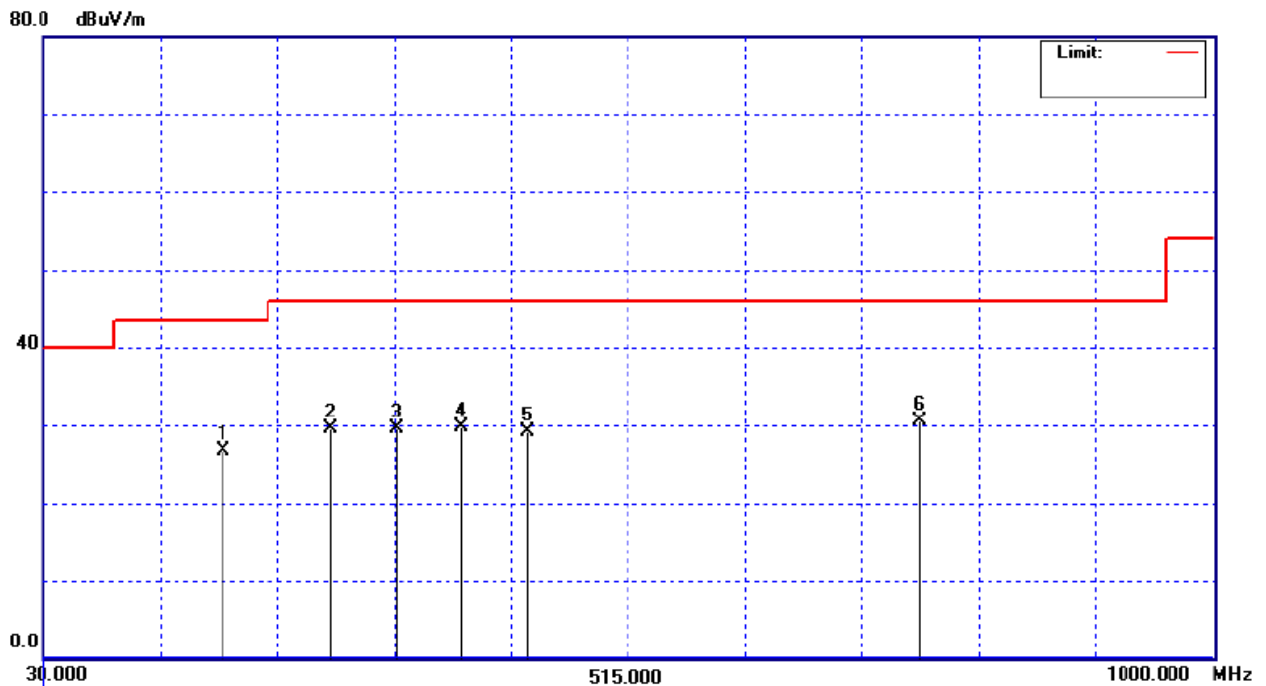


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 1_TX 107.9MHz (Adapter) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
179.38	H	50.80	-24.08	26.72	43.50	- 16.78	(QP)
268.62	H	53.04	-23.62	29.42	46.00	- 16.58	(QP)
322.94	H	51.60	-22.01	29.59	46.00	- 16.41	(QP)
377.26	H	50.27	-20.59	29.68	46.00	- 16.32	(QP)
431.58	H	47.79	-18.73	29.06	46.00	- 16.94	(QP)
757.50	H	39.45	-8.93	30.52	46.00	- 15.48	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz .
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (3) Measuring frequency range from 30MHz to 1000MHz .
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table .

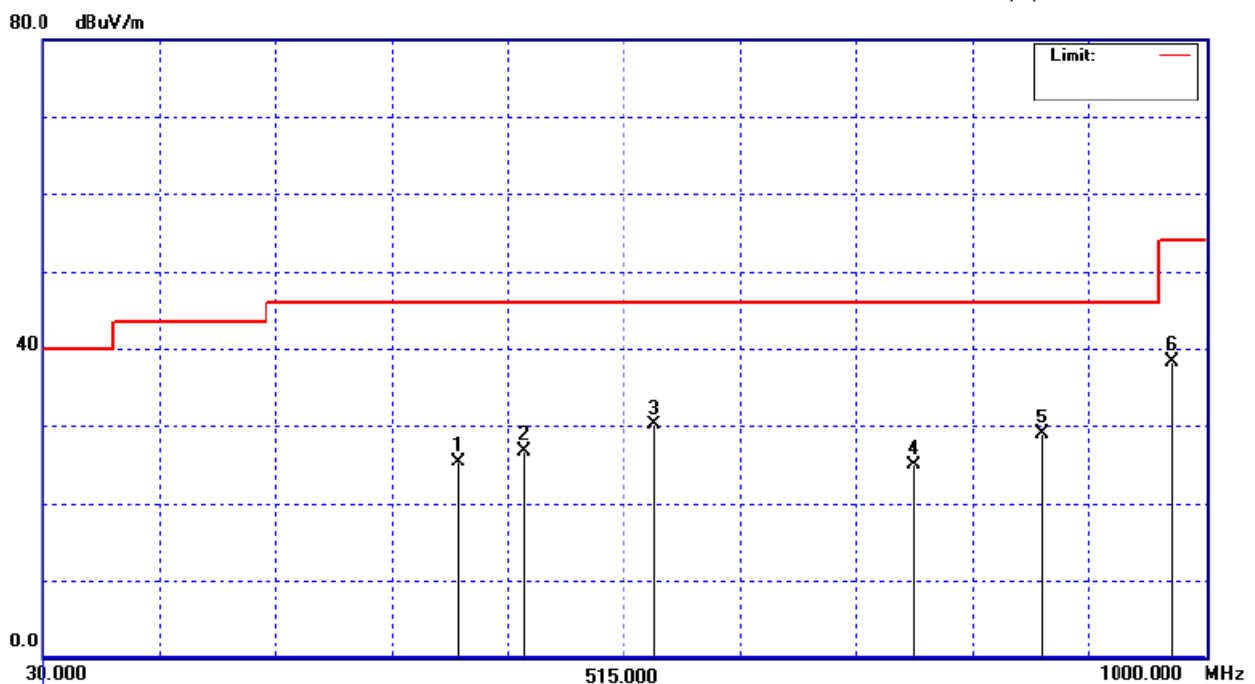


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 2_TX 88.1MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
377.26	V	45.87	-20.59	25.28	46.00	- 20.72	(QP)
431.58	V	45.39	-18.73	26.66	46.00	- 19.34	(QP)
540.22	V	46.76	-16.65	30.11	46.00	- 15.89	(QP)
757.50	V	33.79	-8.93	24.86	46.00	- 21.14	(QP)
864.20	V	36.12	-7.13	28.99	46.00	- 17.01	(QP)
972.84	V	43.20	-4.94	38.26	54.00	- 15.74	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦



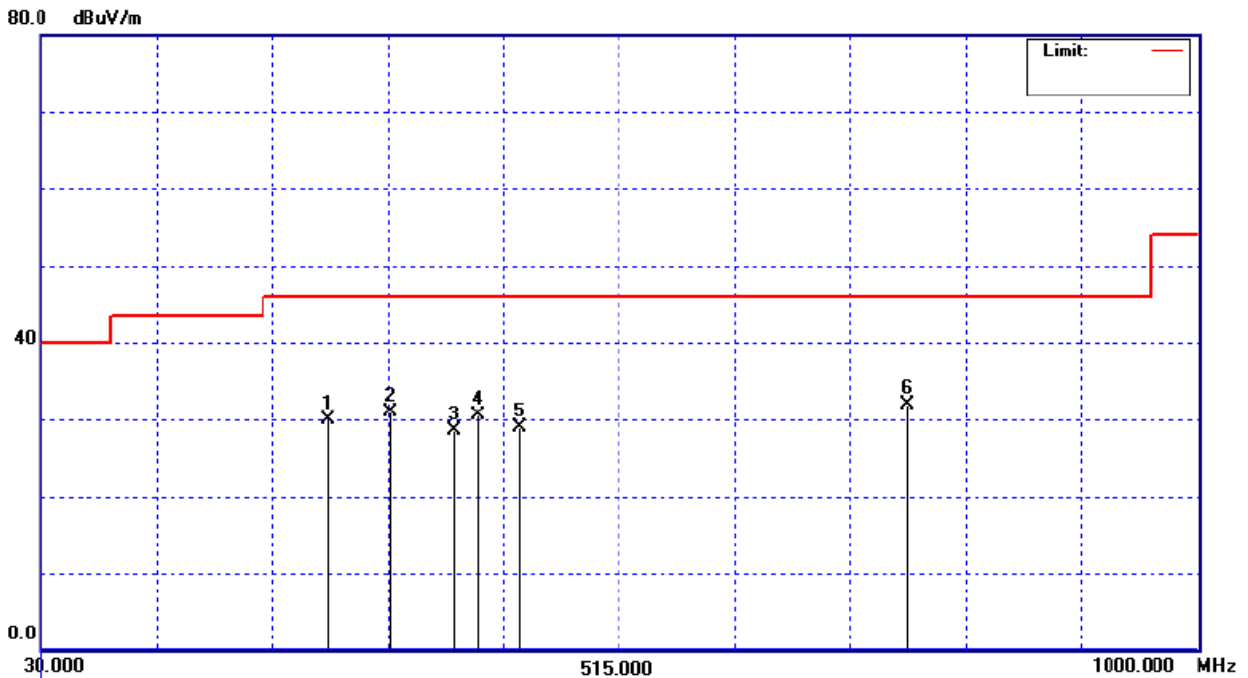
EUT :	GPS Navigation	Model Name :	VN910
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Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 2_TX 88.1MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
270.56	H	53.37	-23.56	29.81	46.00	- 16.19	(QP)
322.94	H	53.00	-22.01	30.99	46.00	- 15.01	(QP)
377.26	H	49.13	-20.59	28.54	46.00	- 17.46	(QP)
396.66	H	50.36	-19.83	30.53	46.00	- 15.47	(QP)
431.58	H	47.68	-18.73	28.95	46.00	- 17.05	(QP)
757.50	H	40.92	-8.93	31.99	46.00	- 14.01	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz .
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (3) Measuring frequency range from 30MHz to 1000MHz .
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table .

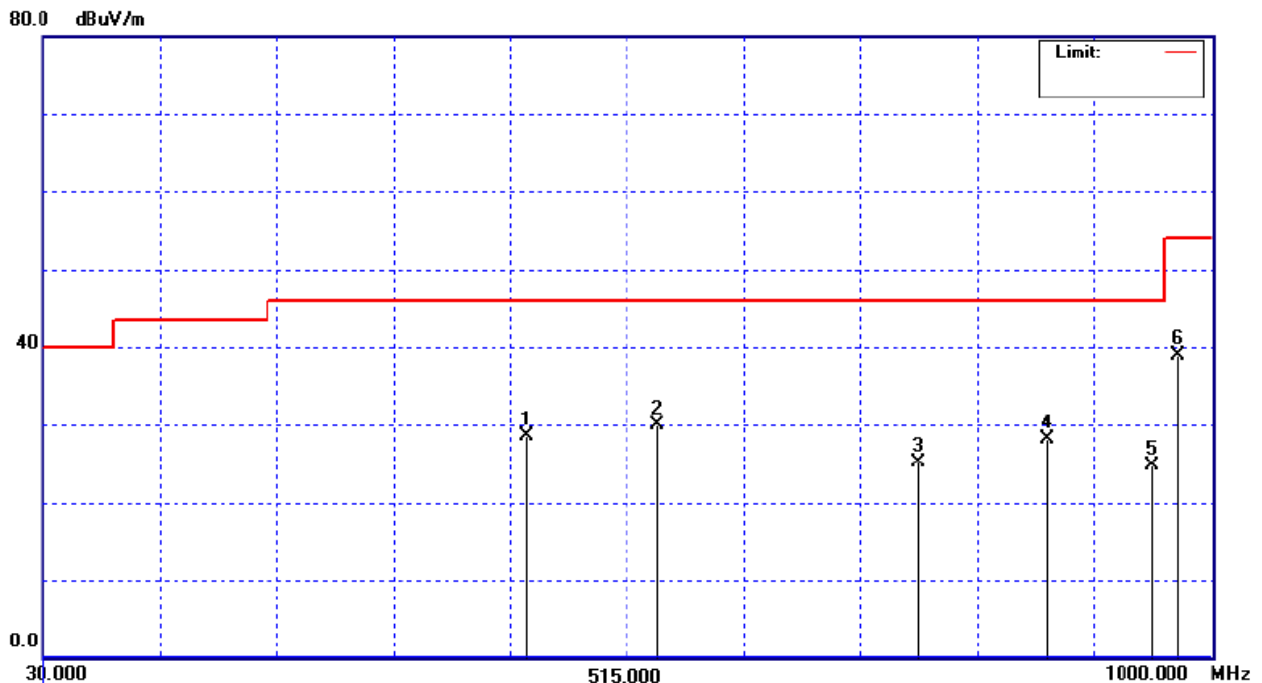


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 2_TX 98.1MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
431.58	V	47.30	-18.73	28.57	46.00	- 17.43	(QP)
540.22	V	46.54	-16.65	29.89	46.00	- 16.11	(QP)
757.50	V	34.02	-8.93	25.09	46.00	- 20.91	(QP)
864.20	V	35.23	-7.13	28.10	46.00	- 17.90	(QP)
951.50	V	30.12	-5.33	24.79	46.00	- 21.21	(QP)
972.84	V	43.84	-4.94	38.90	54.00	- 15.10	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

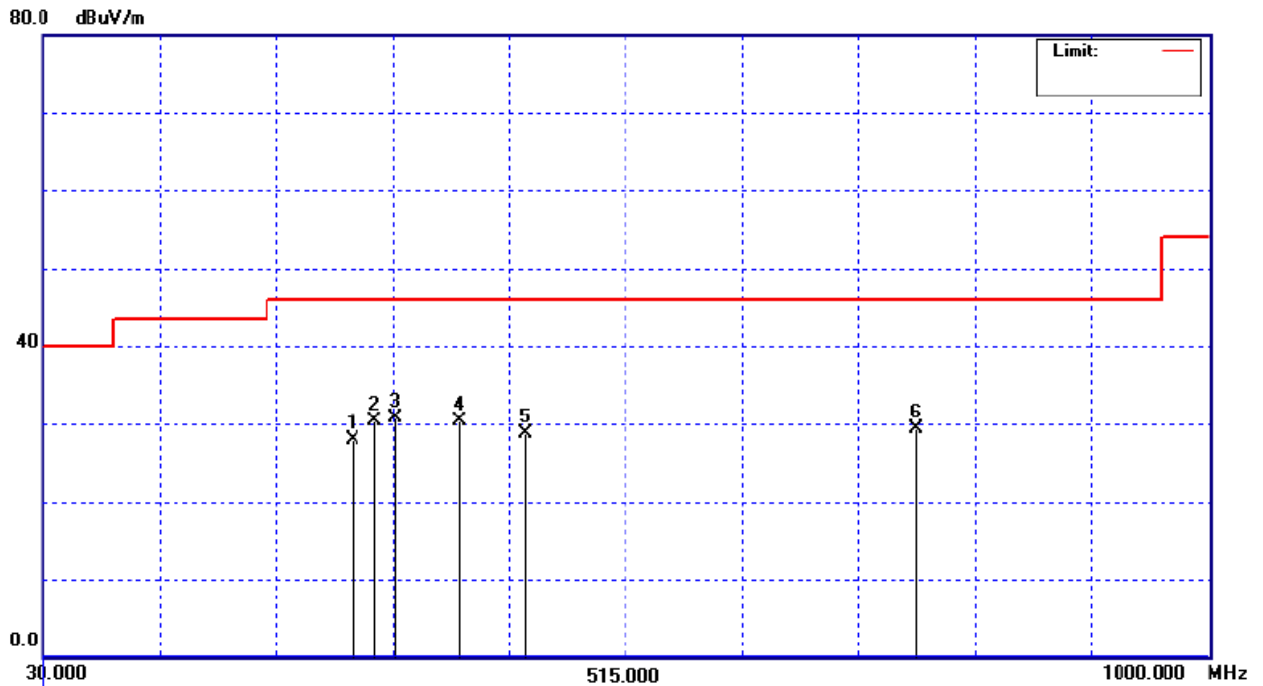


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 2_TX 98.1MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
288.02	H	50.93	-22.96	27.97	46.00	- 18.03	(QP)
305.48	H	52.81	-22.46	30.35	46.00	- 15.65	(QP)
322.94	H	52.72	-22.01	30.71	46.00	- 15.29	(QP)
377.26	H	50.99	-20.59	30.40	46.00	- 15.60	(QP)
431.58	H	47.44	-18.73	28.71	46.00	- 17.29	(QP)
757.50	H	38.30	-8.93	29.37	46.00	- 16.63	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz .
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (3) Measuring frequency range from 30MHz to 1000MHz .
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table .

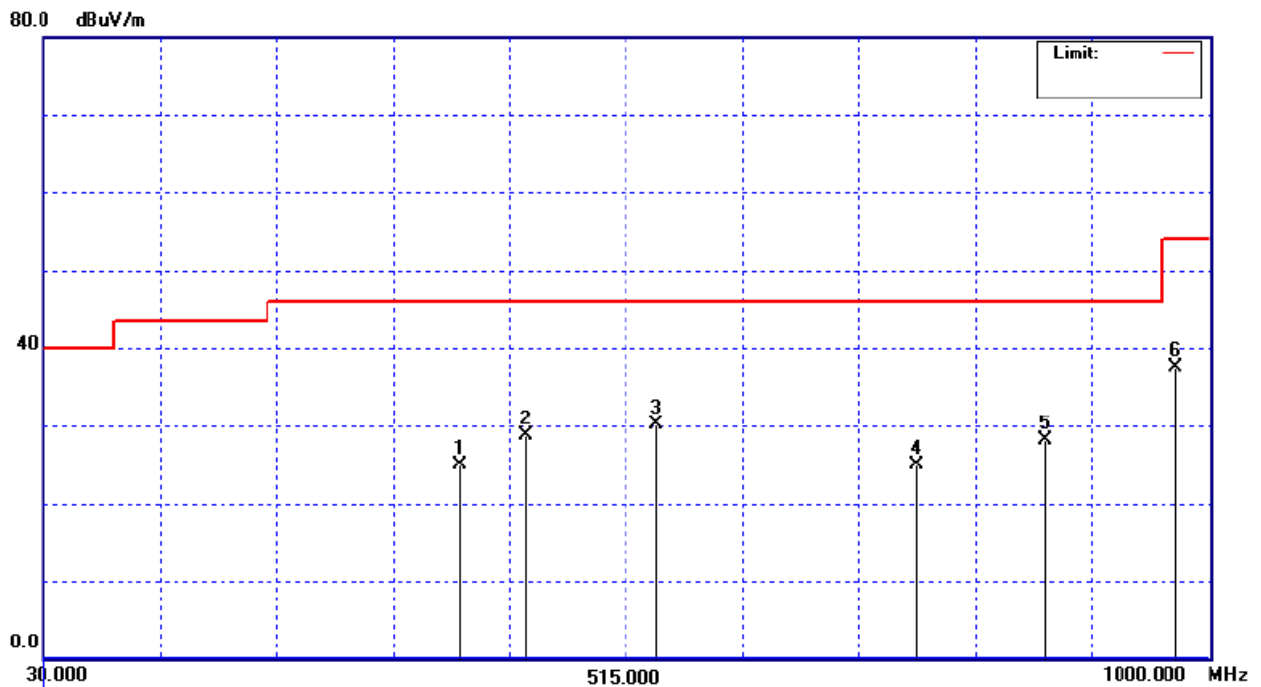


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 2_TX 107.9MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
377.26	V	45.47	-20.59	24.88	46.00	- 21.12	(QP)
431.58	V	47.39	-18.73	28.66	46.00	- 17.34	(QP)
540.22	V	46.73	-16.65	30.08	46.00	- 15.92	(QP)
757.50	V	33.78	-8.93	24.85	46.00	- 21.15	(QP)
864.20	V	35.19	-7.13	28.06	46.00	- 17.94	(QP)
972.84	V	42.51	-4.94	37.57	54.00	- 16.43	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz ◦
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦

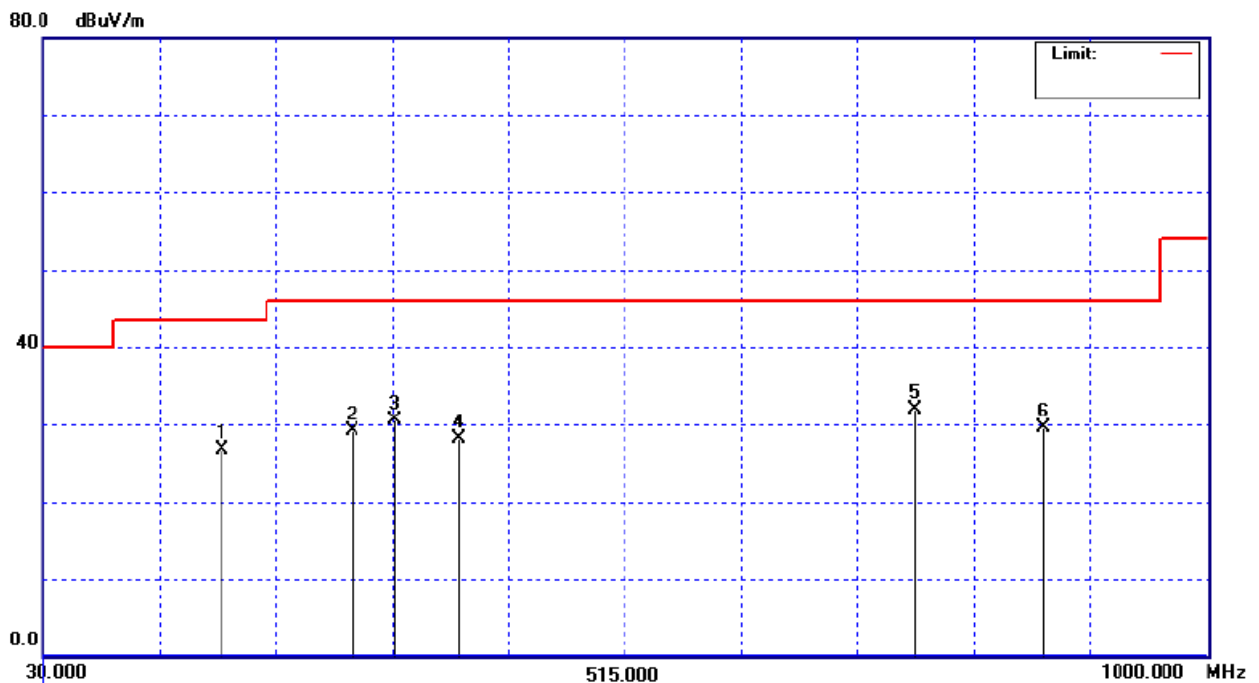


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 2_TX 107.9MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
179.38	H	50.77	-24.08	26.69	43.50	- 16.81	(QP)
288.02	H	52.10	-22.96	29.14	46.00	- 16.86	(QP)
322.94	H	52.55	-22.01	30.54	46.00	- 15.46	(QP)
377.26	H	48.72	-20.59	28.13	46.00	- 17.87	(QP)
757.50	H	40.78	-8.93	31.85	46.00	- 14.15	(QP)
864.20	H	36.62	-7.13	29.49	46.00	- 16.51	(QP)

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz .
- (2) All readings are Peak unless otherwise stated QP in column of 『 Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (3) Measuring frequency range from 30MHz to 1000MHz .
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table .



4.3 BAND EDGE EMISSIONS MEASUREMENT

4.3.1 LIMITS OF BAND EDGE EMISSIONS MEASUREMENT

Band edge emissions outside of the frequency bands shown in below table.

Outside Frequency Band Edge	Limit (dBuV/m) at 3m
Below 88MHz	40.0 (QP)
Above 108MHz	43.5 (QP)

4.3.2 MEASURING INSTRUMENTS AND SETTING

Please refer to section 5 in this report. The following table is the setting of the receiver.

Receiver Parameter	Setting
Center Frequency	Fundamental Frequency
RB	120 KHz
Detector	QP or Peak

4.3.3 TEST PROCEDURE

The test procedure is the same as section 4.2.3, only the frequency range investigated is limited to 2MHz around bandedges.

4.3.4 TEST SETUP LAYOUT

This test setup layout is the same as that shown in section 4.2.5

4.3.5 TEST DEVIATION

There is no deviation with the original standard.

4.3.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

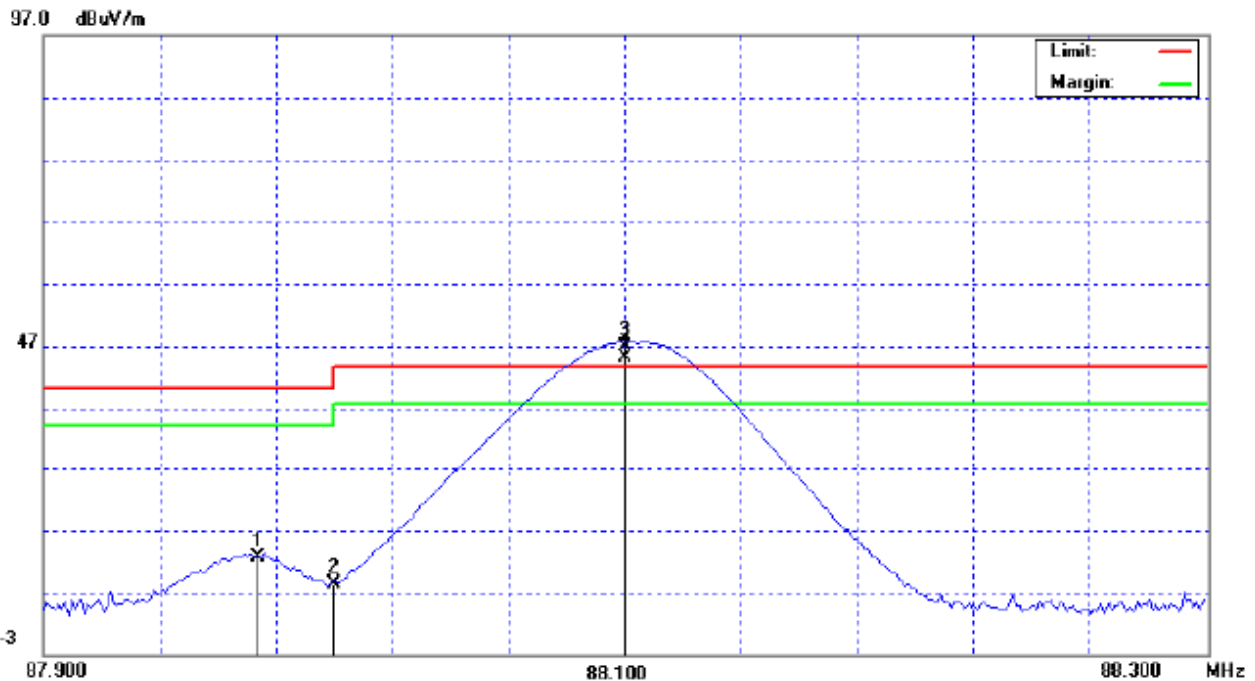
4.2.6 TEST RESULTS

EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 88.1MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
87.9740	V	31.85	-19.33	12.52	40.00	- 27.48	peak
88.0000	V	27.63	-19.33	8.30	40.00	- 31.70	peak
88.1000	V	66.11	-19.32	46.79	68.00	- 21.21	peak
88.1000	V	64.52	-19.32	45.20	48.00	- 2.80	(AV)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

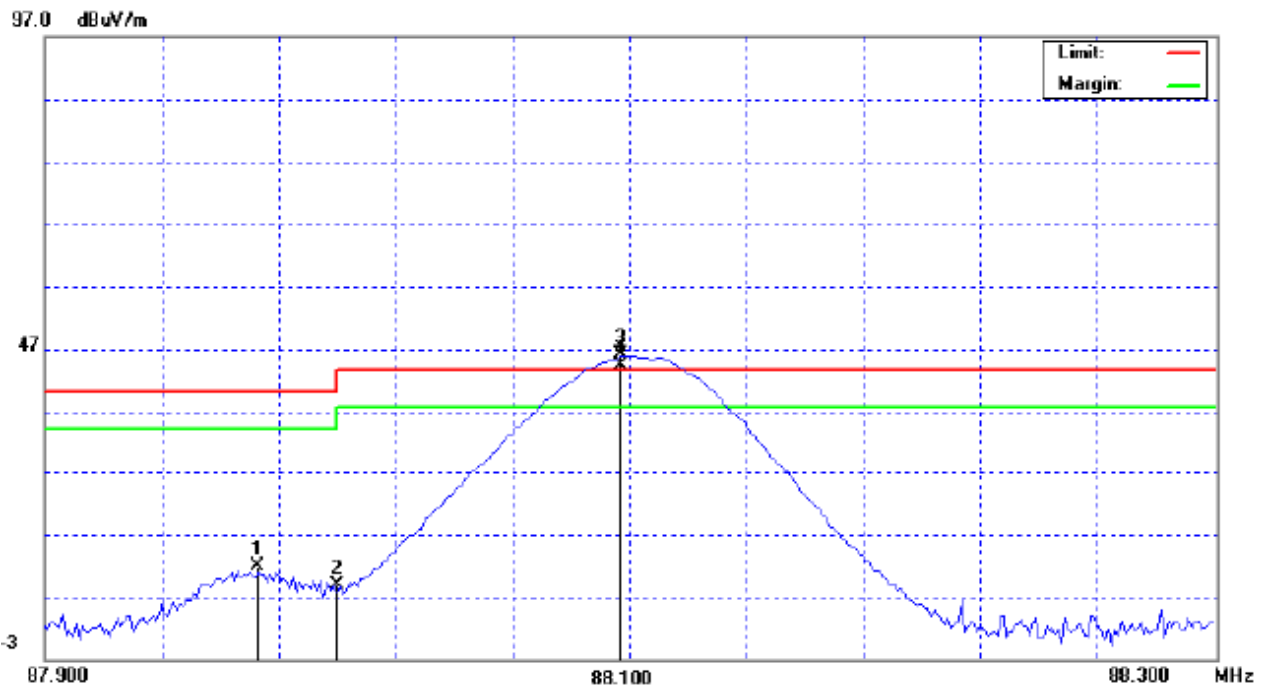


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 88.1MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBUV)	Corr.Factor(CF) (dB)	Measured(FS) (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Note
87.9730	H	31.85	-19.33	11.88	40.00	- 28.12	peak
88.0000	H	28.32	-19.33	8.99	40.00	- 31.01	peak
88.0970	H	65.32	-19.32	46.00	68.00	- 22.00	peak
88.0970	H	63.59	-19.32	44.27	48.00	- 3.73	(AV)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

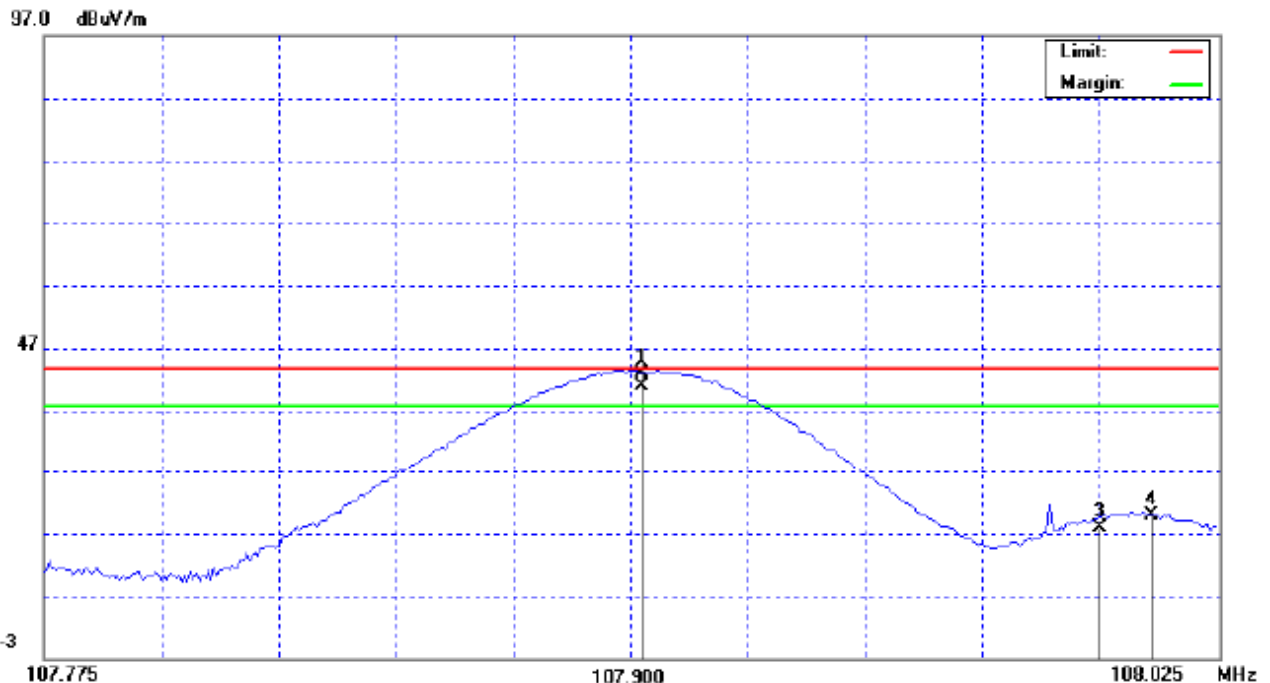


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 107.9MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
107.9025	V	60.32	-17.39	42.93	68.00	- 25.07	peak
107.9025	V	58.32	-17.39	40.93	48.00	- 7.07	(AV)
108.0000	V	35.22	-17.38	17.84	43.50	- 25.66	peak
108.0110	V	37.21	-17.38	17.84	43.50	22.69	peak

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

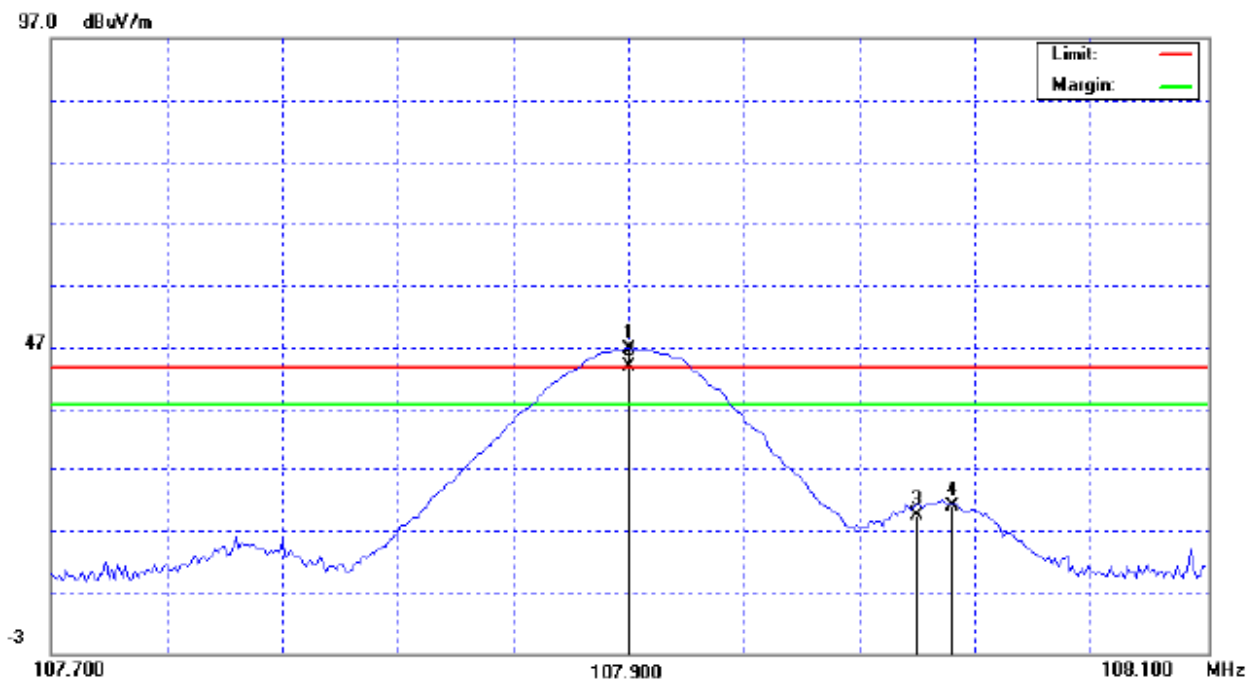


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 107.9MHz (Car Charger) (Stereo mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
107.9000	H	63.98	-17.39	46.59	68.00	- 21.41	(Peak)
107.9000	H	61.32	-17.39	43.93	48.00	- 4.07	(AV)
108.0000	H	36.63	-17.38	19.25	43.50	- 24.25	(Peak)
108.0120	H	38.32	-17.38	20.94	43.50	- 22.56	(Peak)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

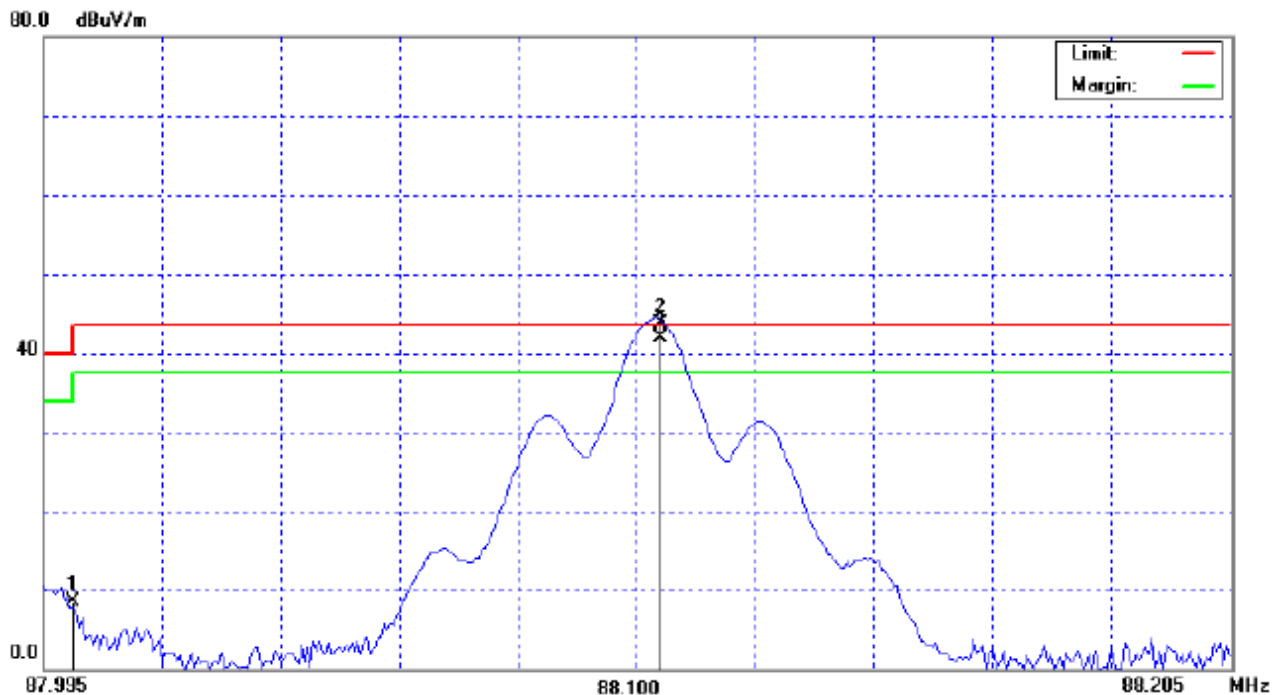


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 88.1MHz (Car Charger) (Mono mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
88.0000	V	26.90	-23.25	3.65	40.00	- 36.35	(Peak)
88.1042	V	62.06	-23.24	38.82	68.00	- 29.18	(Peak)
88.1042	V	60.32	-23.24	37.08	48.00	- 10.92	(AV)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

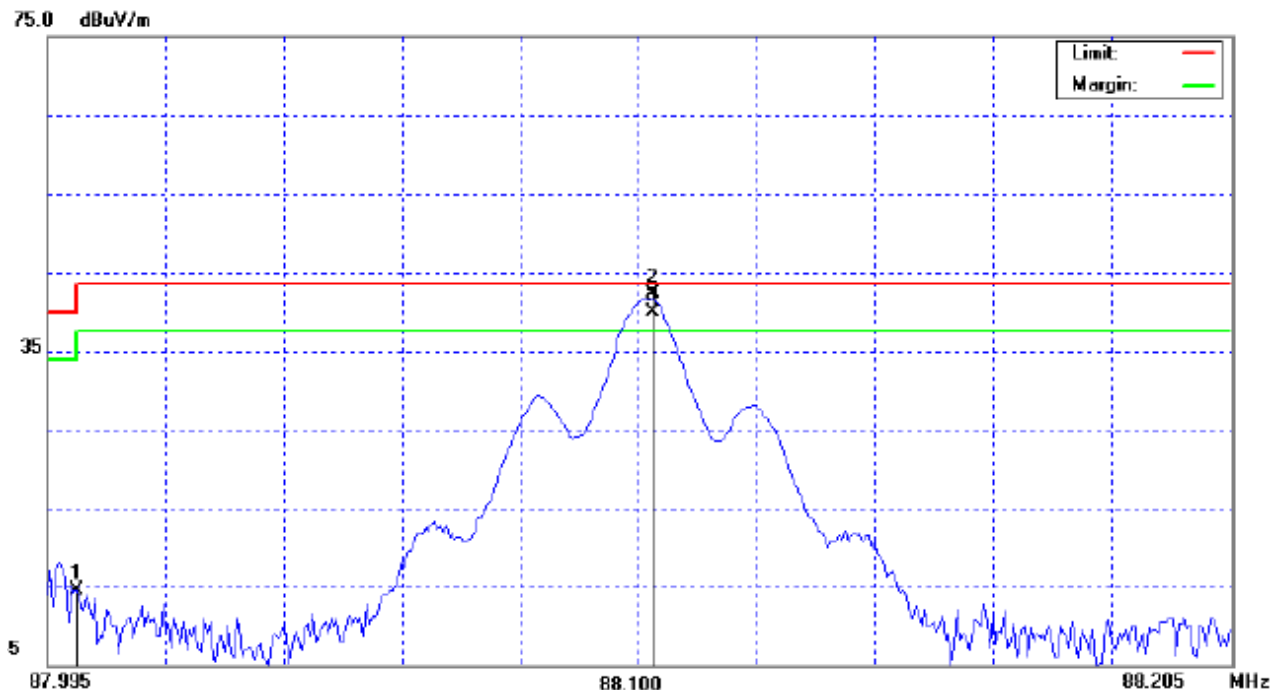


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 88.1MHz (Car Charger) (Mono mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
88.0000	H	22.82	-23.25	-0.43	40.00	- 40.43	(Peak)
88.1026	H	60.63	-23.24	37.39	68.00	- 30.61	(Peak)
88.1026	H	58.32	-23.24	35.08	48.00	- 12.92	(AV)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

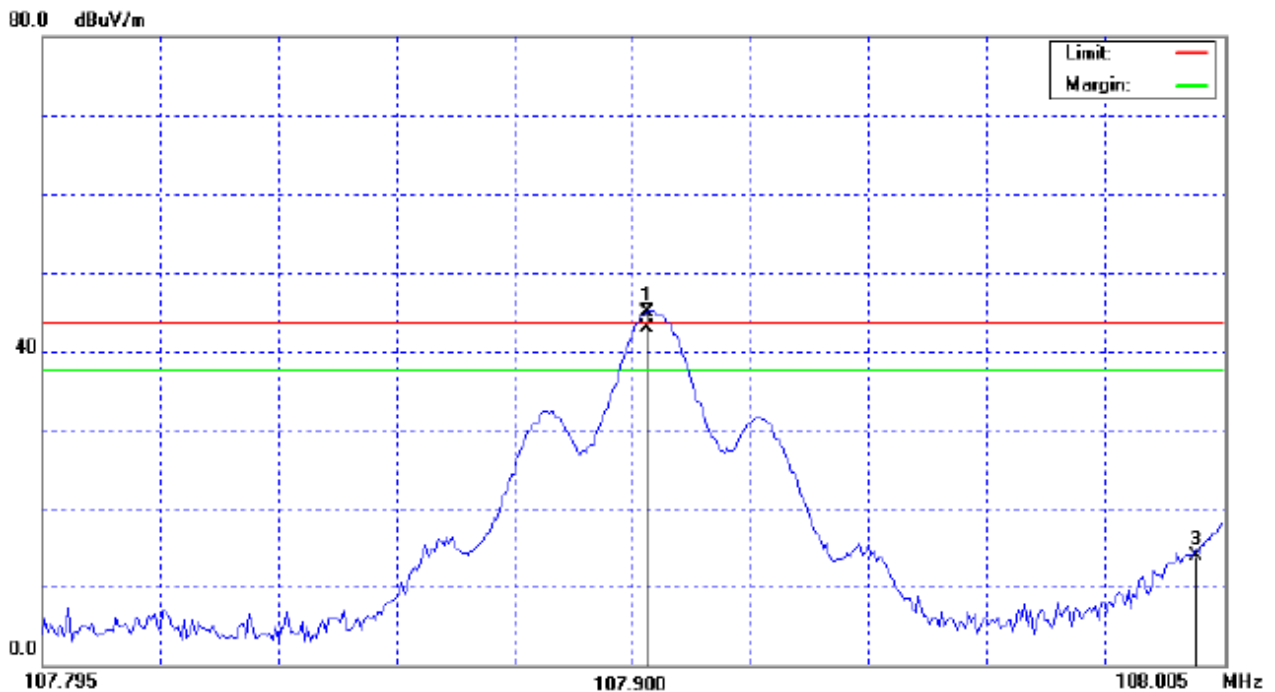


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 107.9MHz (Car Charger) (Mono mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
107.9026	V	61.27	-21.40	39.87	68.00	- 28.13	(Peak)
107.9026	V	59.31	-21.40	37.91	48.00	- 10.09	(AV)
108.0000	V	30.19	-21.39	8.80	43.50	- 34.70	(Peak)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

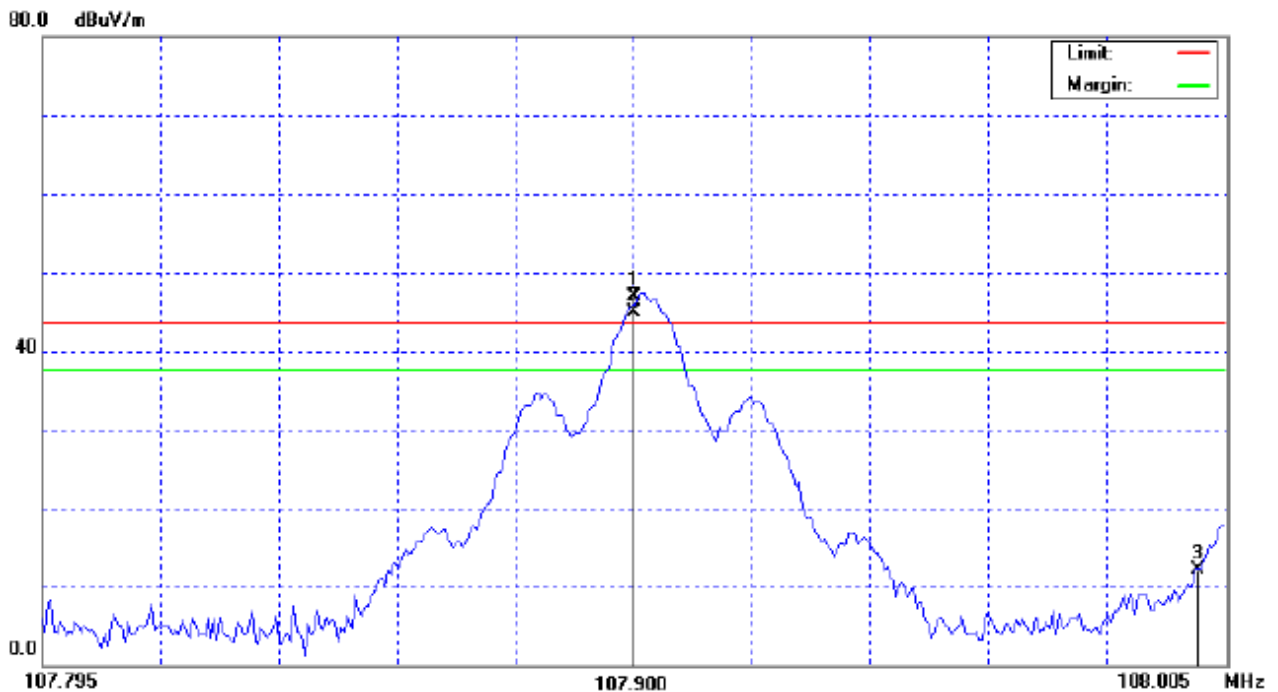


EUT :	GPS Navigation	Model Name :	VN910
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Voltage :	DC 12V
Test Mode :	Mode 1_TX 107.9MHz (Car Charger) (Mono mode)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Note
107.9000	H	63.32	-21.41	41.91	68.00	- 26.09	(Peak)
107.9000	H	61.32	-21.40	39.92	48.00	- 8.08	(AV)
108.0000	H	28.41	-21.39	7.02	43.50	- 36.48	(Peak)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 10KHz, VBW=10KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand



5. BANDWIDTH REQUIREMENT

5.1.1 LIMITS OF EMISSION BAND MEASUREMENT

Emissions from the intentional radiator shall be confined within a bands 200kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88 to 108MHz.

5.1.2 MEASUREMENT INSTRUMENTS LIST

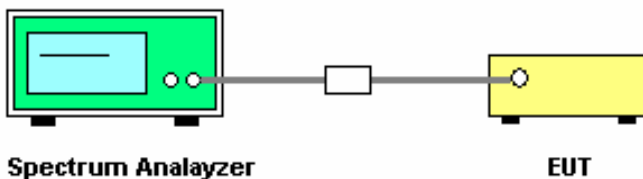
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 20dB Bandwidth
RB	10 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.1.3 TEST PROCEDURE

- The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
- The resolution bandwidth of 10 kHz and the video bandwidth of 10 kHz were used.
- Measured the spectrum width with power higher than 20dB below carrier.

5.1.4 TEST SETUP LAYOUT



5.1.5 TEST DEVIATION

There is no deviation with the original standard.

5.1.6 EUT OPERATION DURING TEST

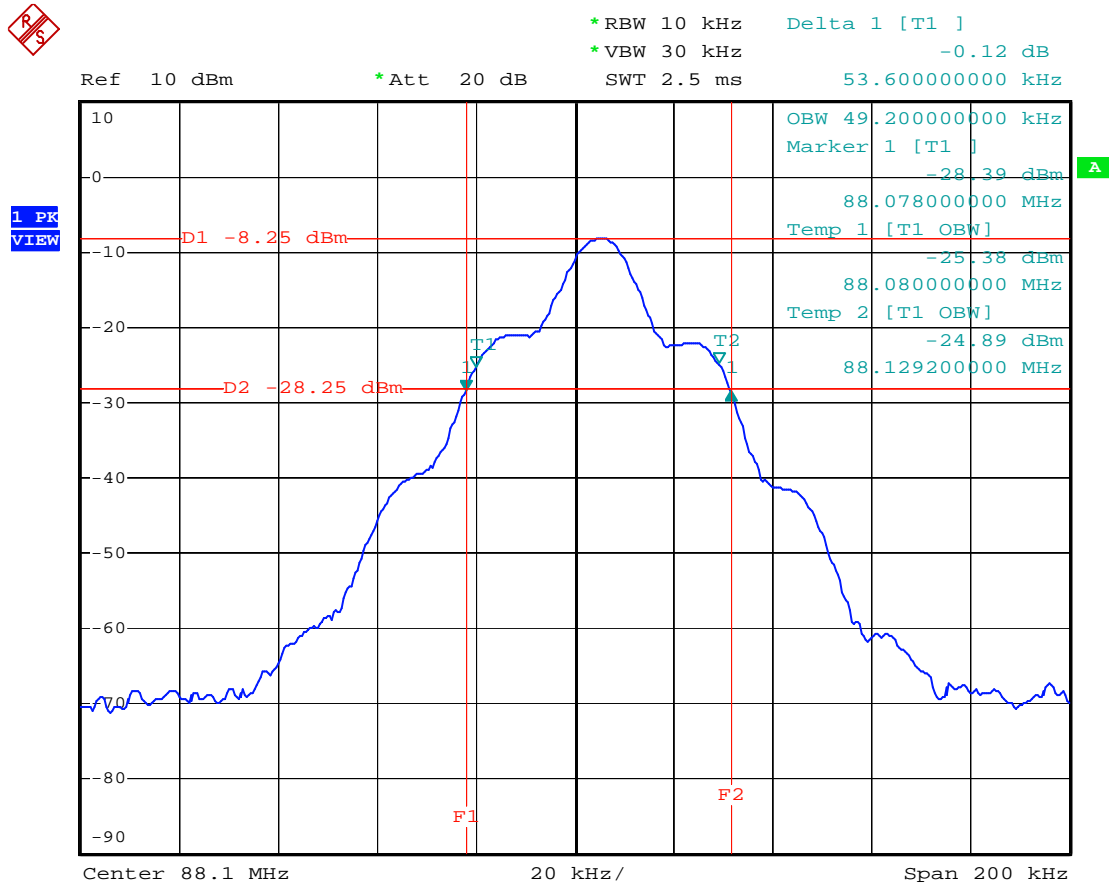
The EUT was programmed to be in continuously transmitting mode.

5.1.7 TEST RESULT OF 20dB SPECTRUM BANDWIDTH

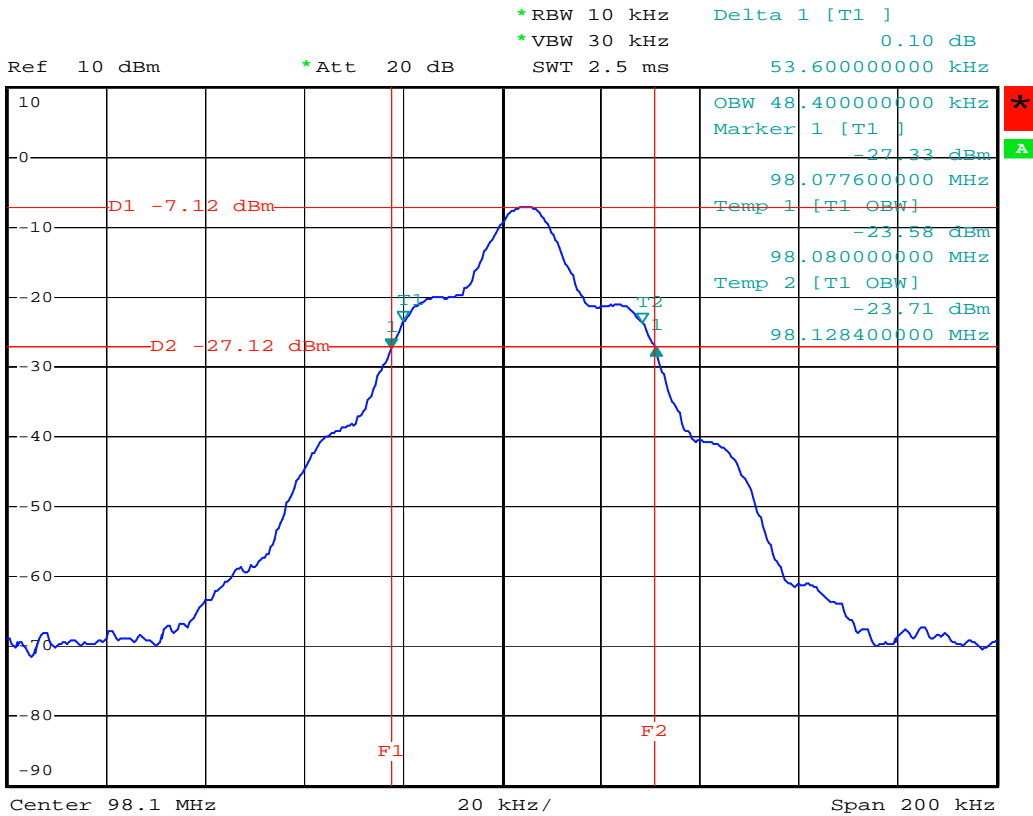
EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TRANSMITTER (Mono mode)		
Note :	TX 88.1MHz /98.1MHz /107.9MHz		

Frequency	20dB BW (kHz)	99% OBW (kHz)	Frequency range (MHz) f _L > 88MHz	Frequency range (MHz) f _H < 108MHz	Test Result
88.1 MHz	53.60	49.20		-	Complies
98.1 MHz	53.60	48.40	-	-	Complies
107.9 MHz	53.60	49.20	-	-	Complies

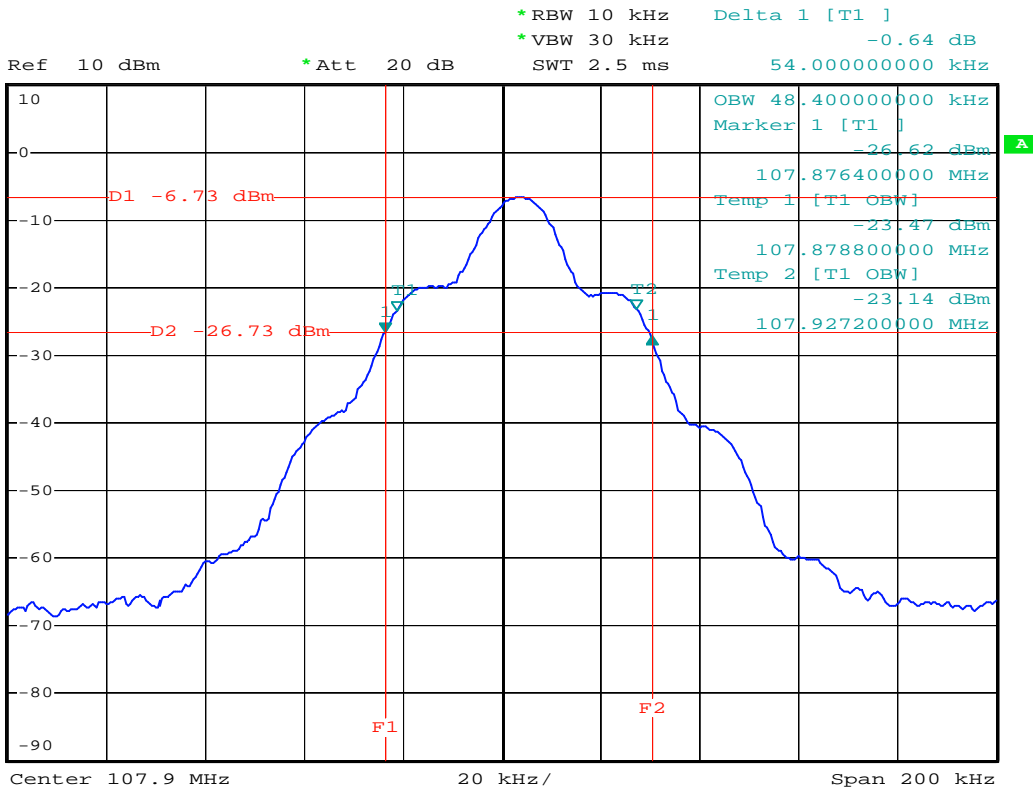
20 dB/99% Bandwidth Plot on 88.1 MHz



20 dB/99% Bandwidth Plot on 98.1 MHz



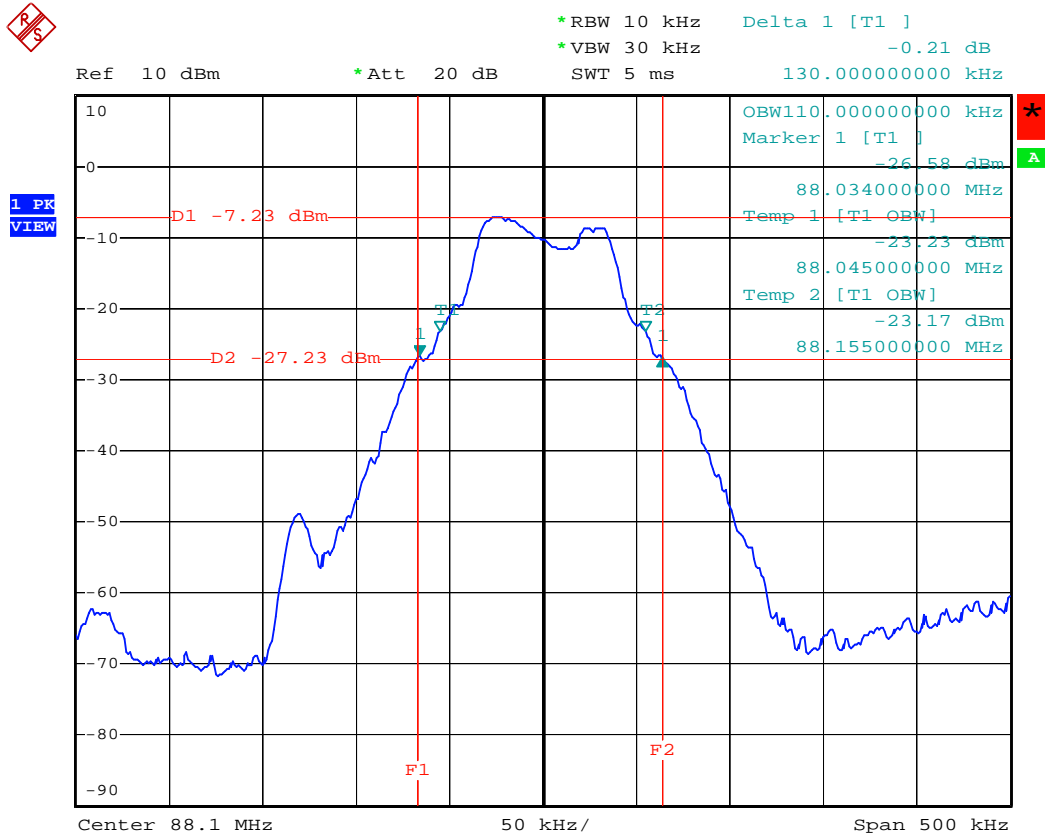
20 dB/99% Bandwidth Plot on 107.9 MHz



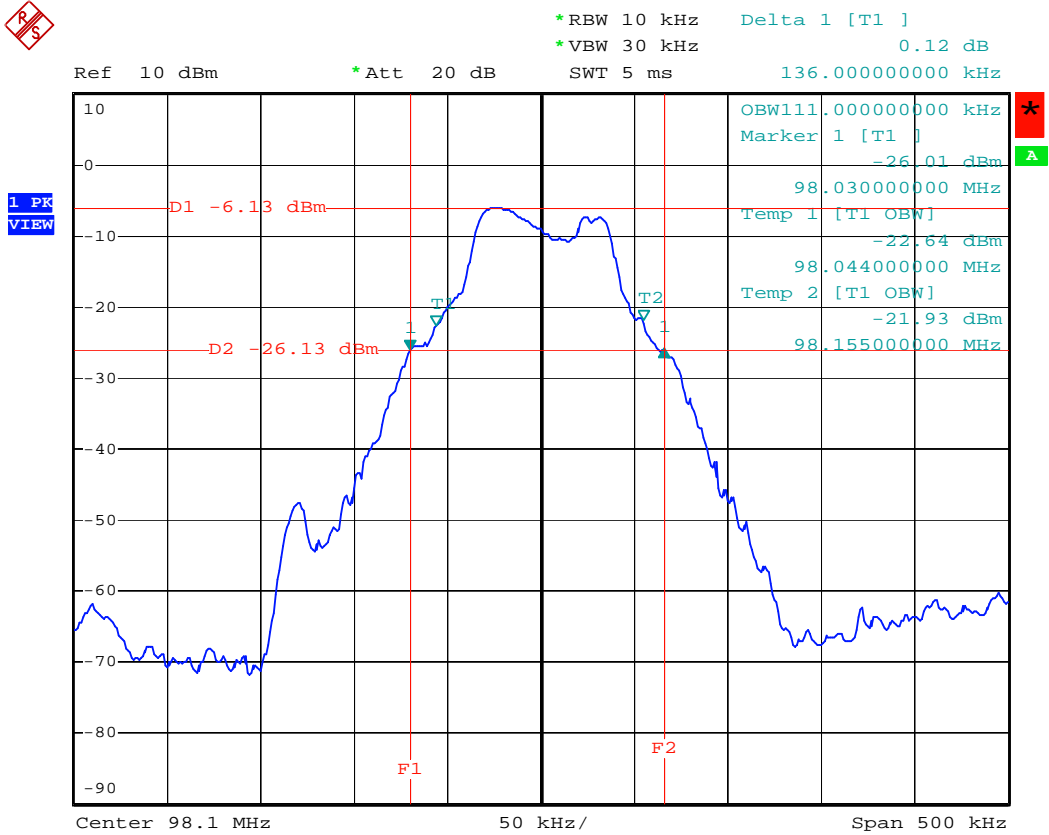
EUT :	GPS Navigation	Model Name :	VN910
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TRANSMITTER (Stereo mode)		
Note :	TX 88.1MHz /98.1MHz /107.9MHz		

Frequency	20dB BW (kHz)	99% OBW (kHz)	Frequency range (MHz) f _L > 88MHz	Frequency range (MHz) f _H < 108MHz	Test Result
88.1 MHz	130.00	110.00		-	Complies
98.1 MHz	136.00	111.00	-	-	Complies
107.9 MHz	136.00	111.00	-	-	Complies

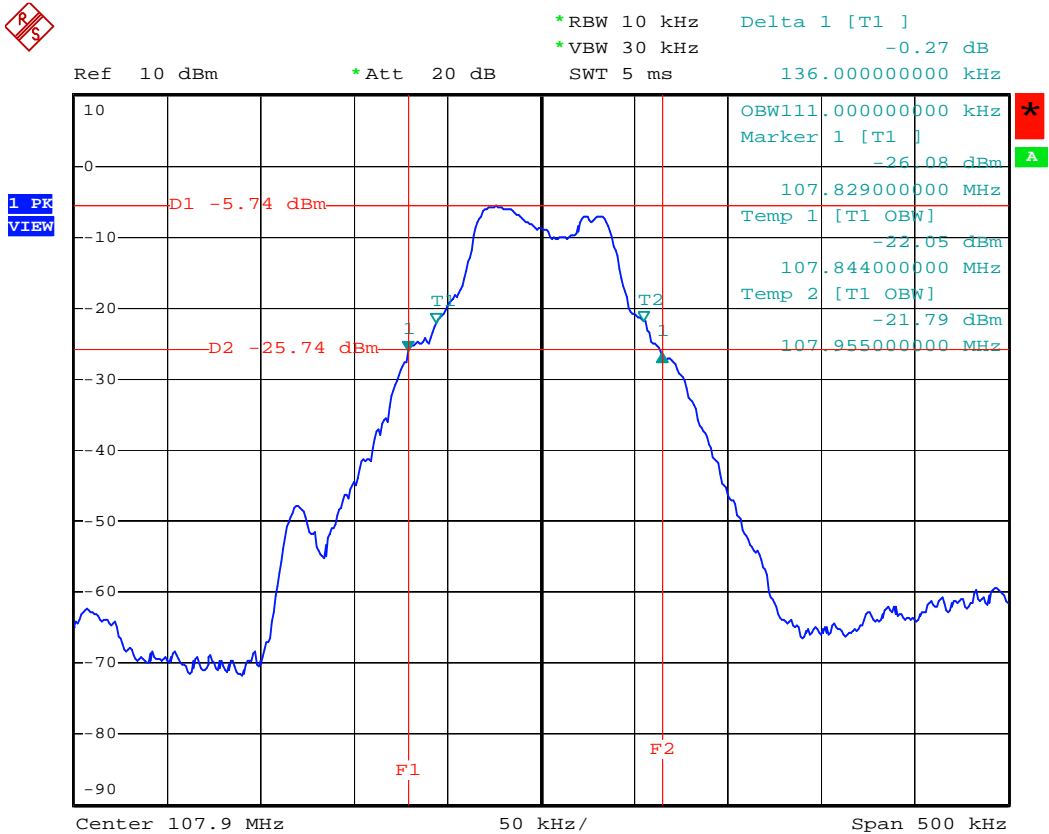
20 dB/99% Bandwidth Plot on 88.1 MHz



20 dB/99% Bandwidth Plot on 98.1 MHz



20 dB/99% Bandwidth Plot on 107.9 MHz



6. EUT TEST PHOTO

Conducted Measurement Photos



Radiated Measurement Photos

