

FCC Test Report

FCC ID: S5V-D101V2

Product: Tablet PC
Trade Mark: DragonTouch
Model Number: V10
Serial Model: M10
Report No.: SER171101070001E

Prepared for

PROEXPRESS DISTRIBUTOR LLC

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part15B ANSI C63.4: 2014	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd
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 FCC Registration Number:463705; IC Registration Number:9270A-1
 CNAS Registration Number:L5516

1.2 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 %**.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~12.4GHz	5.0	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Tablet PC	
Trade Mark	DragonTouch	
Model Name	V10	
Serial Model	M10	
Model Difference	All the model are the same circuit and RF module, except the model name.	
Product Description	The EUT is a Tablet PC.	
	Connecting I/O port:	USB, HDMI, TF Card
	Operation Frequency:	BT:2402~2480 MHz WIFI:802.11b/g/n20:2412~2462MHz 802.11n40MHz: 2422-2452MHz
	Modulation Type:	BT(1Mbps): GFSK BT EDR(2Mbps): $\pi/4$ -DQPSK BT EDR(3Mbps): 8-DPSK IEEE 802.11b : DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g/n (HT20/HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Power Source	DC 3.7V from Battery or DC 5V from Adapter.	
Adapter	Model: GS-0500200A Input:100~240V,AC 50/60Hz Output:5V, 2000mA	
Battery	DC 3.7V/5600mAh	
Firmware version	NRD90M release-keys	
HW Version	XT-K102-V10	
SW Version	Alps-mp-n0.mp102-v2.10.1_cptp8163.tb.n_P10	

2.1.1 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.

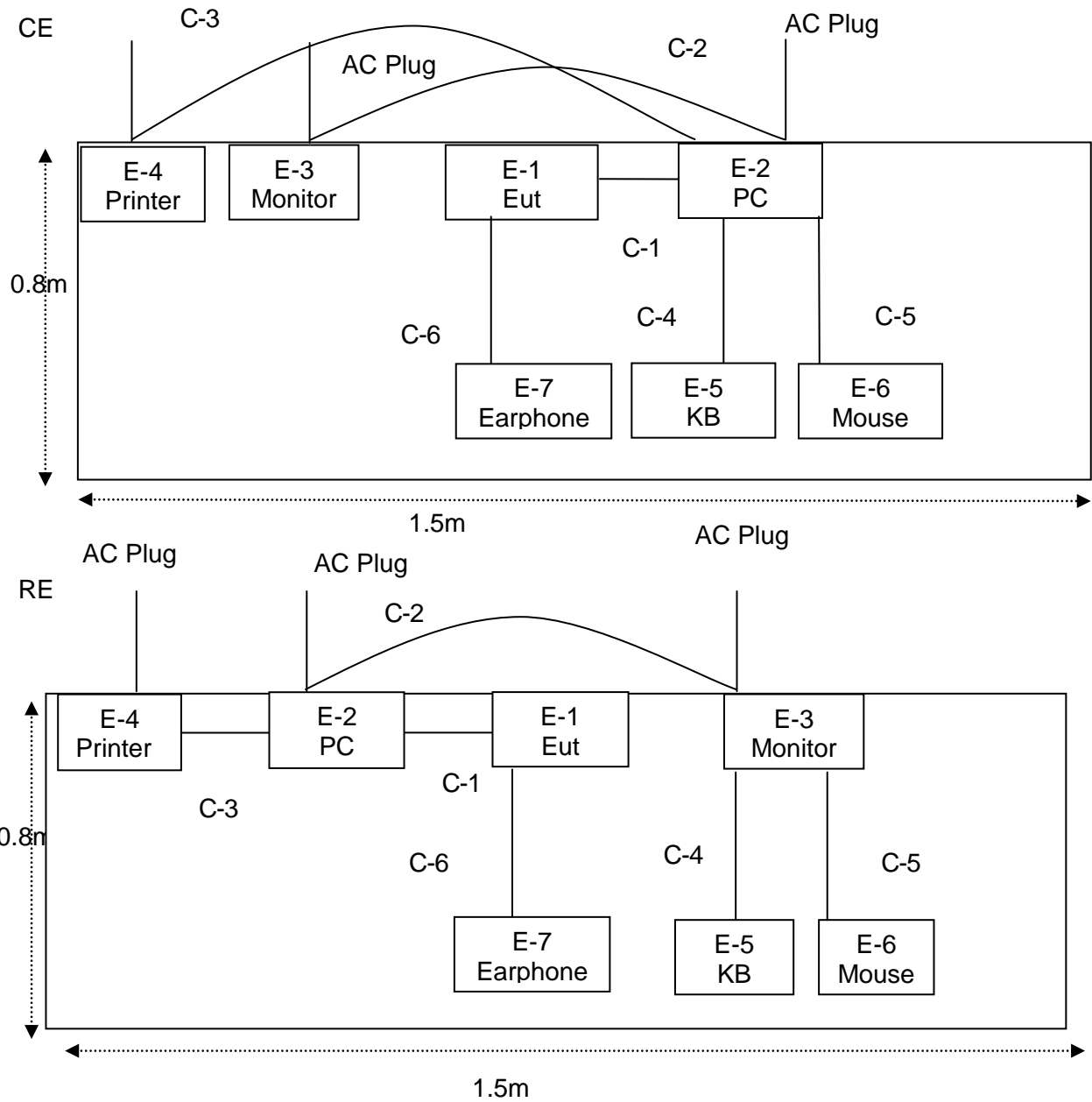
Pretest Mode	Description
Mode 1	TF card Play+HDMI
Mode 2	USB Playing+HDMI
Mode 3	Charging
Mode 4	BT
Mode 5	WIFI
Mode 6	Data transmitting

For Conducted Test	
Final Test Mode	Description
Mode 1	TF card Play+HDMI
Mode 2	USB Playing+HDMI
Mode 3	Charging
Mode 4	BT
Mode 5	WIFI
Mode 6	Data transmitting

For Radiated Test	
Final Test Mode	Description
Mode 1	TF card Play+HDMI
Mode 2	USB Playing+HDMI
Mode 3	Charging
Mode 4	BT
Mode 5	WIFI
Mode 6	Data transmitting

Note: Final Test Mode: Through Pre-scan, find the mode 6 is the worst case. Only the worst case mode is recorded in the report.

2.2 DESCRIPTION OF TEST SETUP



2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

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	Brand	Model/Type No.	Series No.	Note
E-1	Tablet PC	DragonTouch	V10	N/A	EUT
E-2	PC	DELL	FT4Y23X	34413561645	
E-3	Monitor	SHARP	LCD-32MS46A	09426089241597	Peripherals
E-4	Printer	Canon	L11121E	LBP2900	Peripherals
E-5	KB	DELL	SK-8185	OY526KUS	
E-6	Mouse	DELL	MS111-P	cn-011d3v-71581-11e-1th 7	Peripherals
E-7	Earphone	N/A	2688	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable	NO	NO	1.2m	
C-2	HDMI Cable	NO	NO	1.0m	
C-3	USB Cable	NO	NO	1.2m	
C-4	KB Cable	NO	NO	1.2m	
C-5	Mouse Cable	NO	NO	1.2m	
C-6	Earphone Cable	NO	NO	1.2m	

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.
- (3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.4 MEASUREMENT INSTRUMENTS LIST
Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2017.06.06	2018.06.05	1 year
2	Test Receiver	R&S	ESPI	101318	2017.06.06	2018.06.05	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2017.04.09	2018.04.08	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2017.06.06	2018.06.05	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2017.06.06	2018.06.05	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2017.04.09	2018.04.08	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2017.07.06	2018.07.05	1 year
8	Amplifier	EMC	EMC051835SE	980246	2017.08.09	2018.08.08	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2017.06.06	2018.06.05	1 year
10	Power Meter	DARE	RPR3006W	15I00041SNO84	2017.08.09	2018.08.08	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2017.07.06	2018.07.05	1 year
12	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
13	High Test Cable(1G-40GHz)	N/A	R-03	N/A	2017.04.21	2020.04.20	3 year
14	High Test Cable(1G-40GHz)	N/A	R-04	N/A	2017.04.21	2020.04.20	3 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2017.06.06	2018.06.05	1 year
2	LISN	R&S	ENV216	101313	2017.04.19	2018.04.18	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2017.06.06	2018.06.05	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2017.06.06	2018.06.05	1 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

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

Note:

- (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.

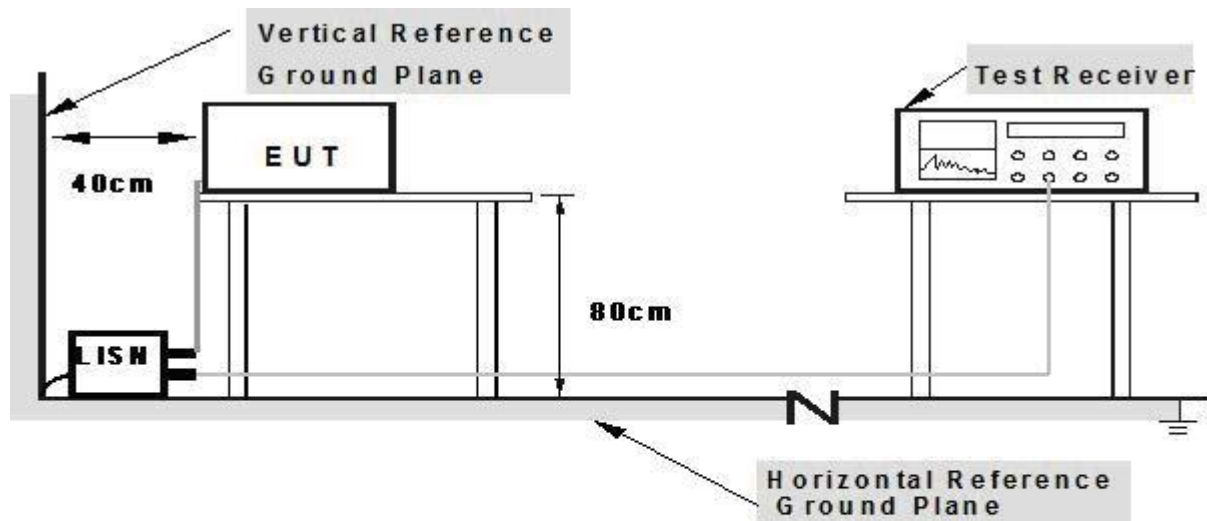
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

- a. 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 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.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

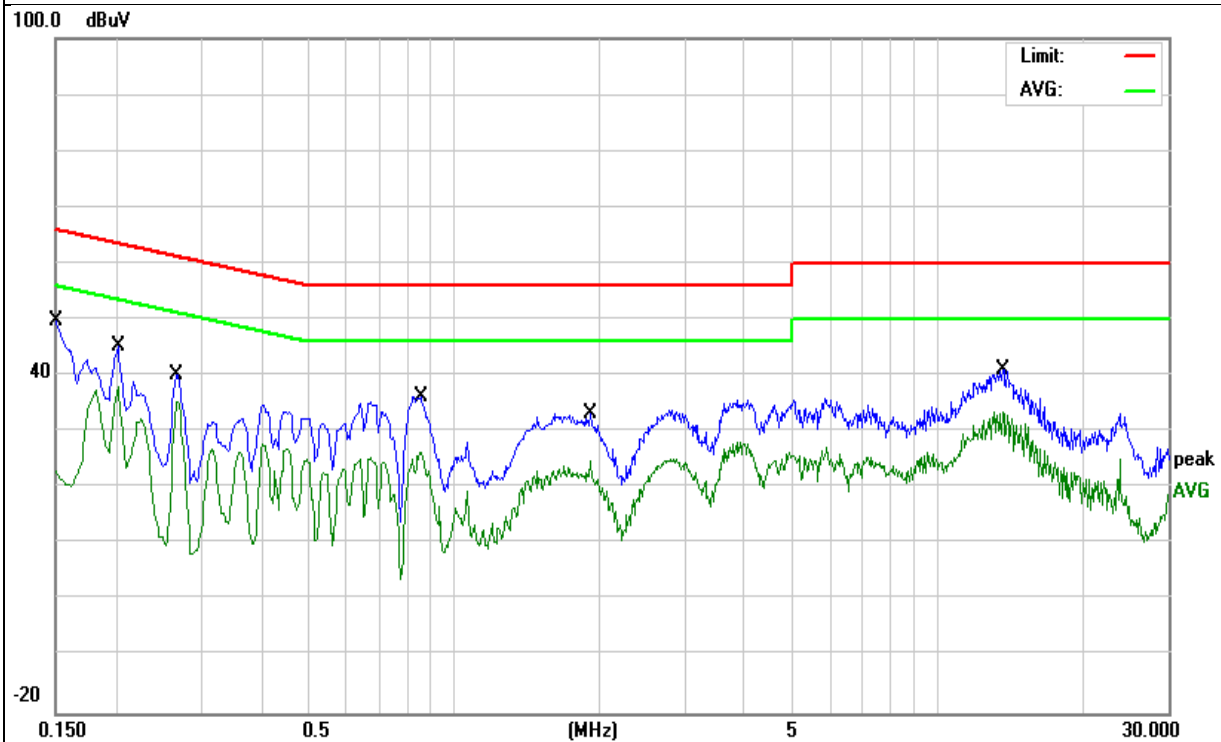
3.1.5 TEST RESULTS

EUT:	Tablet PC	Model Name. :	V10
Temperature:	25 °C	Relative Humidity:	40%
Pressure:	1010hPa	Test Date:	2017-11-01
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 5V from PC AC120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1501	40.00	9.82	49.82	66.00	-16.18	QP
0.1501	13.20	9.82	23.02	56.00	-32.98	AVG
0.2020	35.38	9.82	45.20	63.52	-18.32	QP
0.2020	28.13	9.82	37.95	53.52	-15.57	AVG
0.2700	30.47	9.82	40.29	61.12	-20.83	QP
0.2700	25.48	9.82	35.30	51.12	-15.82	AVG
0.8540	26.34	9.88	36.22	56.00	-19.78	QP
0.8540	16.58	9.88	26.46	46.00	-19.54	AVG
1.9220	23.40	9.85	33.25	56.00	-22.75	QP
1.9220	15.00	9.85	24.85	46.00	-21.15	AVG
13.6339	30.93	10.15	41.08	60.00	-18.92	QP
13.6339	23.30	10.15	33.45	50.00	-16.55	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

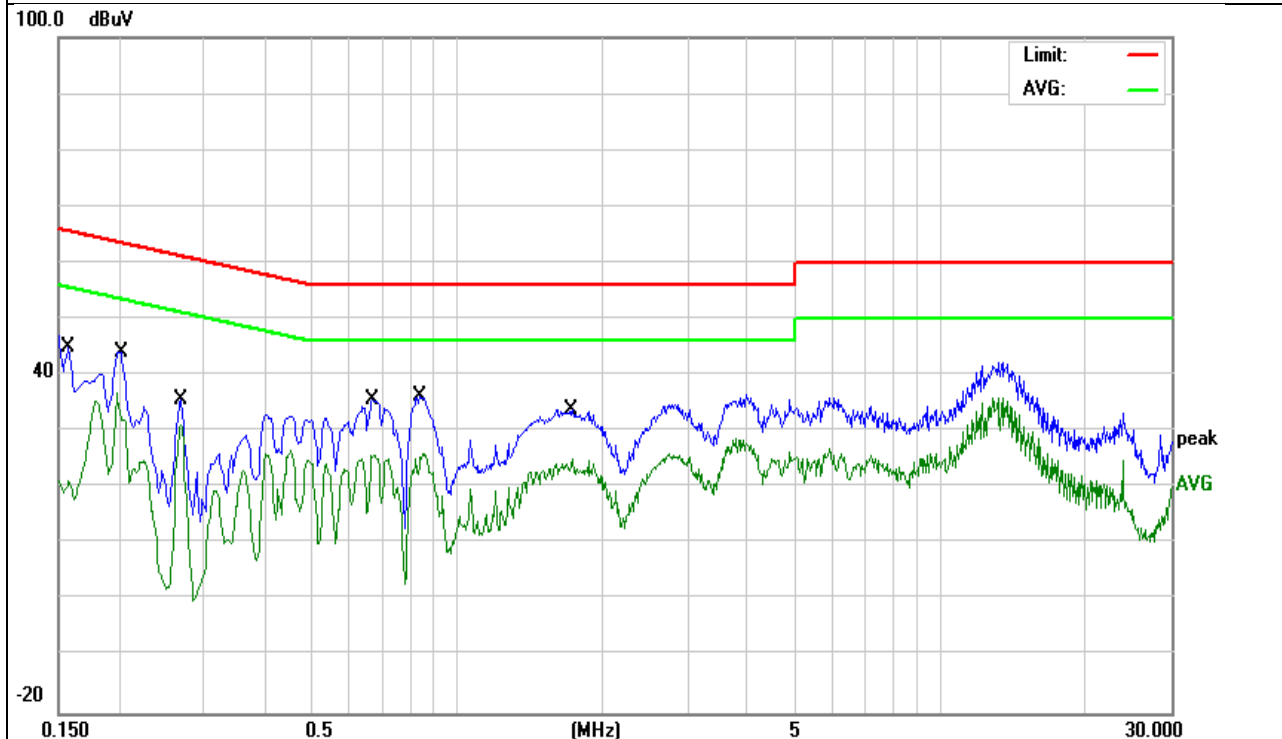


EUT:	Tablet PC	Model Name. :	V10
Temperature:	25 °C	Relative Humidity:	40%
Pressure:	1010hPa	Test Date:	2017-11-01
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 5V from PC AC120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1580	35.11	9.92	45.03	65.56	-20.53	QP
0.1580	11.26	9.92	21.18	55.56	-34.38	AVG
0.2020	34.24	9.92	44.16	63.52	-19.36	QP
0.2020	26.81	9.92	36.73	53.52	-16.79	AVG
0.2700	25.80	9.92	35.72	61.12	-25.40	QP
0.2700	21.23	9.92	31.15	51.12	-19.97	AVG
0.6780	25.73	9.93	35.66	56.00	-20.34	QP
0.6780	15.83	9.93	25.76	46.00	-20.24	AVG
0.8380	26.21	9.93	36.14	56.00	-19.86	QP
0.8380	16.16	9.93	26.09	46.00	-19.91	AVG
1.7380	24.06	9.94	34.00	56.00	-22.00	QP
1.7380	15.31	9.94	25.25	46.00	-20.75	AVG

Remark:

- All readings are Quasi-Peak and Average values.
- Factor = Insertion Loss + Cable Loss.

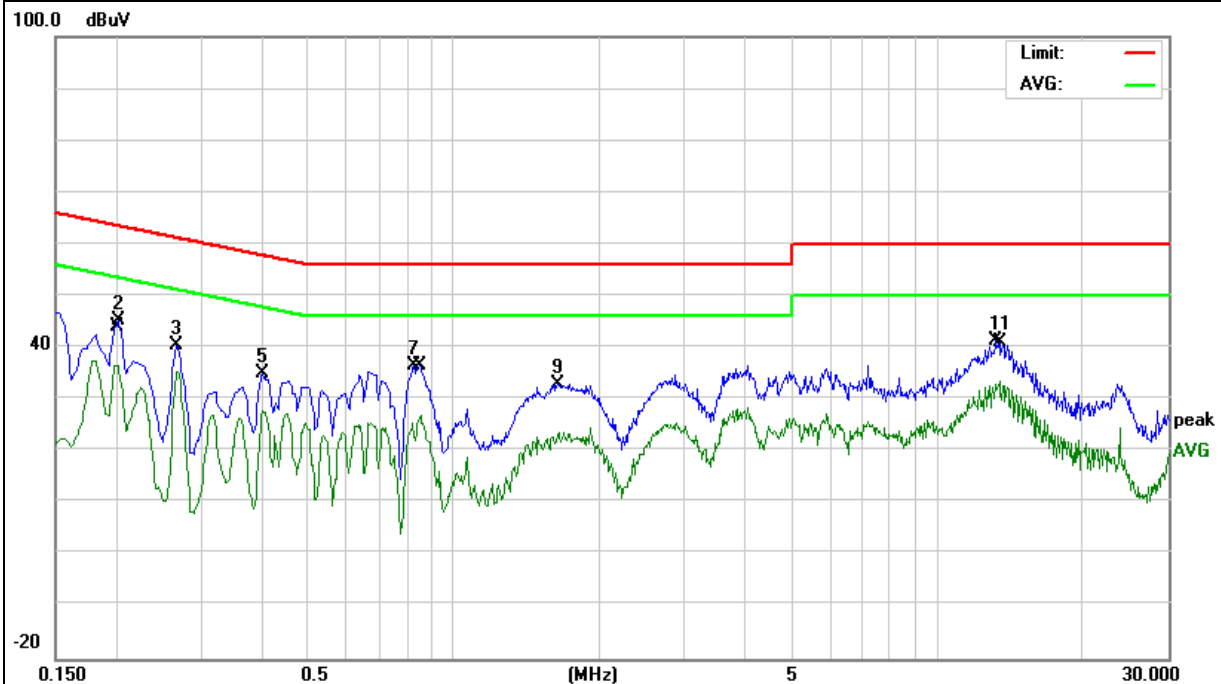


EUT:	Tablet PC	Model Name. :	V10
Temperature:	25 °C	Relative Humidity:	40%
Pressure:	1010hPa	Test Date:	2017-11-01
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 5V from PC AC240V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measurement (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2020	26.71	9.82	36.53	53.52	-16.99	QP
0.2020	35.56	9.82	45.38	63.52	-18.14	AVG
0.2660	30.58	9.82	40.40	61.24	-20.84	QP
0.2660	25.54	9.82	35.36	51.24	-15.88	AVG
0.4020	25.27	9.83	35.10	57.81	-22.71	QP
0.4020	18.02	9.83	27.85	47.81	-19.96	AVG
0.8300	26.77	9.87	36.64	56.00	-19.36	QP
0.8300	17.01	9.87	26.88	46.00	-19.12	AVG
1.6460	23.21	9.88	33.09	56.00	-22.91	QP
1.6460	13.82	9.88	23.70	46.00	-22.30	AVG
13.4419	31.10	10.14	41.24	60.00	-18.76	QP
13.4419	23.36	10.14	33.50	50.00	-16.50	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

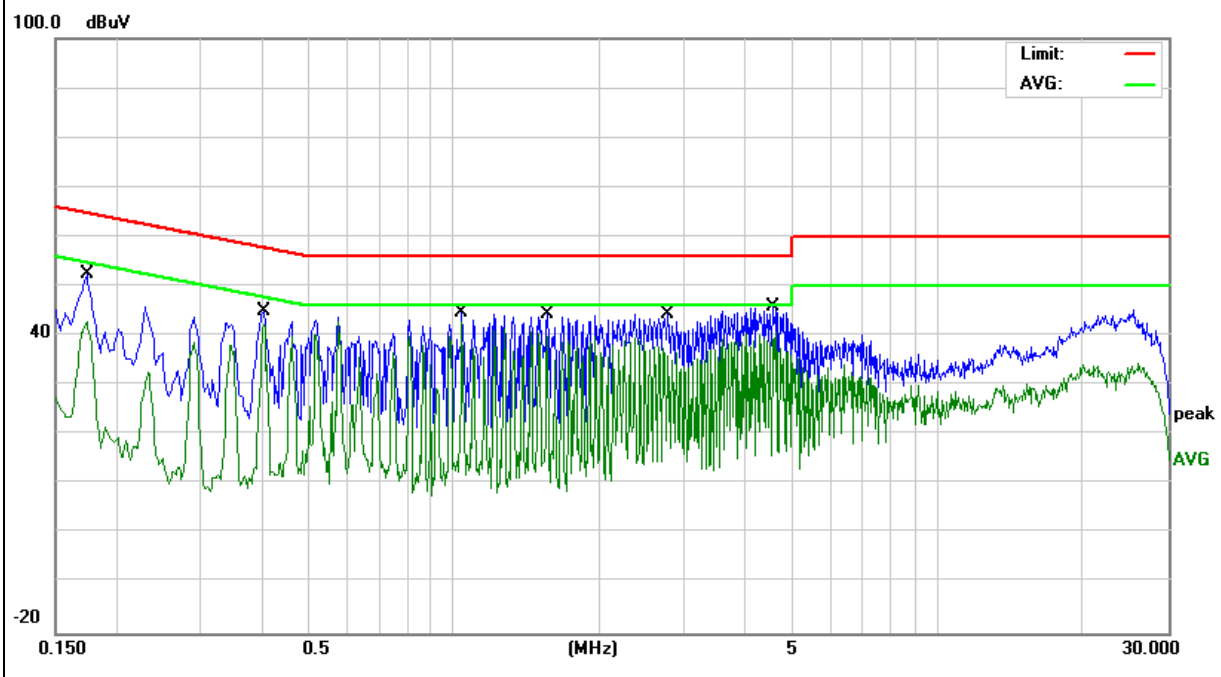


EUT:	Tablet PC	Model Name. :	V10
Temperature:	25 °C	Relative Humidity:	40%
Pressure:	1010hPa	Test Date:	2017-11-01
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 5V from PC AC240V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2020	34.24	9.92	44.16	63.52	-19.36	QP
0.2020	26.81	9.92	36.73	53.52	-16.79	AVG
0.2700	25.80	9.92	35.72	61.12	-25.40	QP
0.2700	21.23	9.92	31.15	51.12	-19.97	AVG
0.6780	25.73	9.93	35.66	56.00	-20.34	QP
0.6780	15.83	9.93	25.76	46.00	-20.24	AVG
0.8580	26.21	9.93	36.14	56.00	-19.86	QP
0.8580	16.16	9.93	26.09	46.00	-19.91	AVG
1.7380	24.06	9.94	34.00	56.00	-22.00	QP
1.7380	15.31	9.94	25.25	46.00	-20.75	AVG
3.7820	25.43	9.95	35.38	56.00	-20.62	QP
3.7820	18.77	9.95	28.72	46.00	-17.28	

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

- (1) The limit for radiated test was performed according to as following:
FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Test Arrangement for Radiated Emissions above 1 GHz.

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

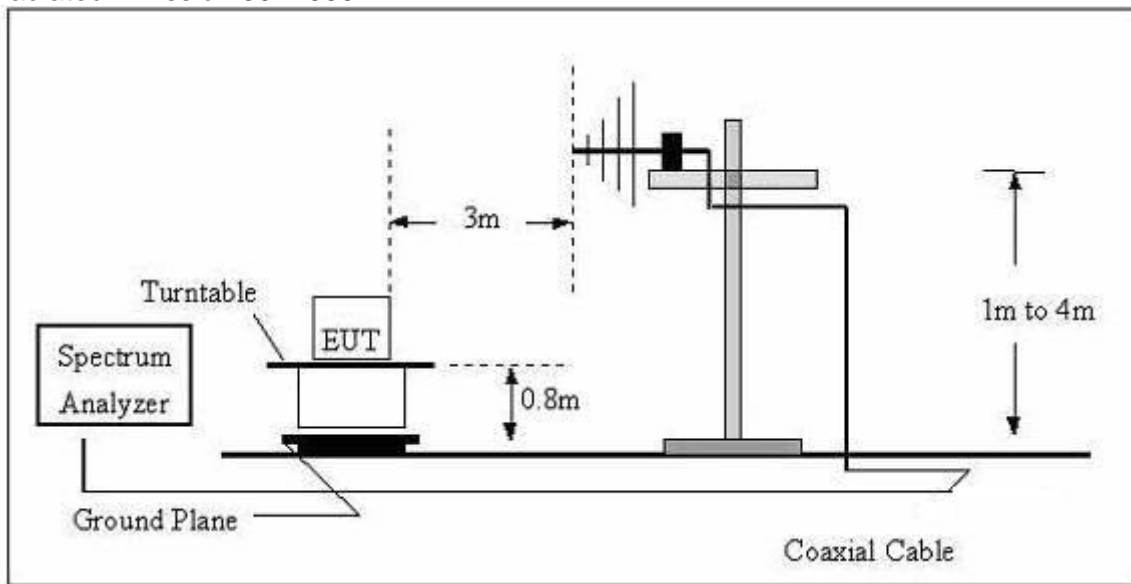
Note: For the hand-held device, the EUT should be measured for all 3 axes and only the worst

case is recorded in the report
 During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

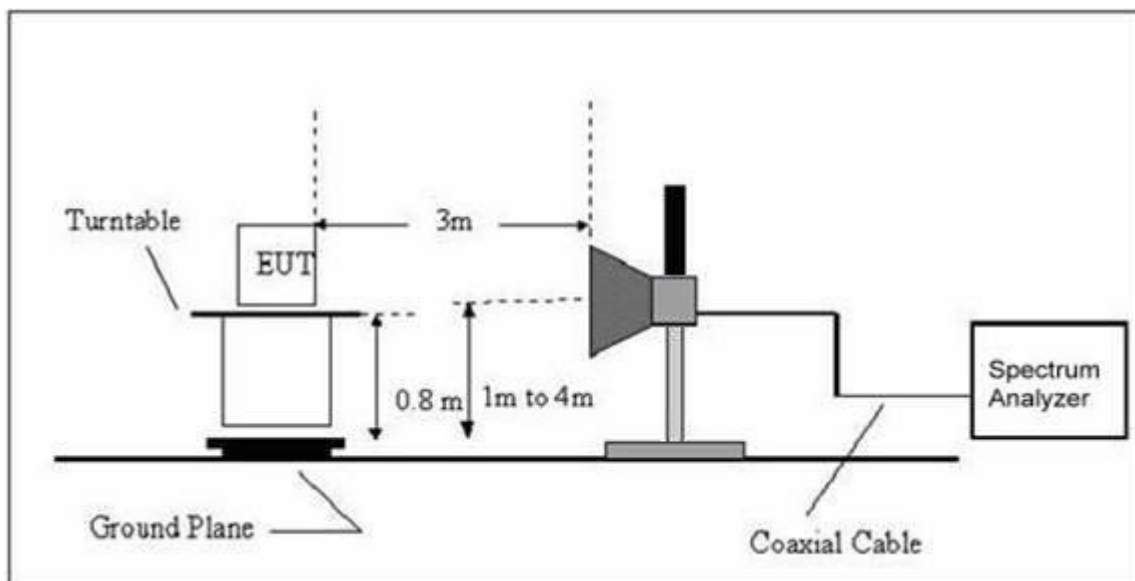
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Avg	1 MHz	10 Hz

3.2.3 TEST SETUP

For Radiated Emission 30~1000MHz



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



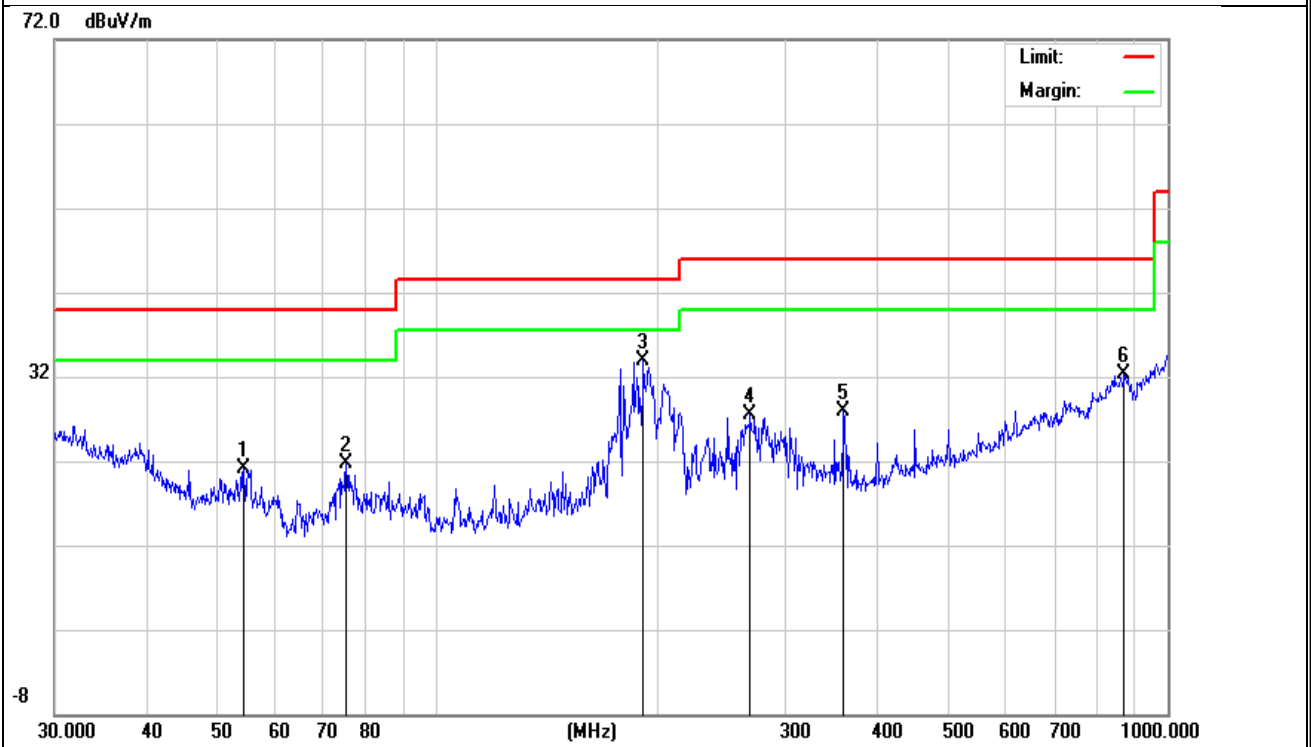
3.2.4 TEST RESULTS

TEST RESULTS (30~1000 MHz)

EUT:	Tablet PC	Model Name:	V10
Temperature:	25 °C	Relative Humidity:	55%
Pressure:	1010 hPa	Test Date :	2017-11-01
Test Mode :	Mode 1	Polarization :	Horizontal
Test Power :	DC 5V from PC AC120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	54.4516	8.84	12.27	21.11	40.00	-18.89	QP
H	75.1822	10.46	11.22	21.68	40.00	-18.32	QP
H	191.7450	20.80	13.08	33.88	43.50	-9.62	QP
H	268.4853	14.36	13.11	27.47	46.00	-18.53	QP
H	360.4476	13.40	14.47	27.87	46.00	-18.13	QP
H	872.1832	6.47	25.93	32.40	46.00	-13.60	QP

Remark:
Factor = Antenna Factor + Cable Loss - Amplifier.

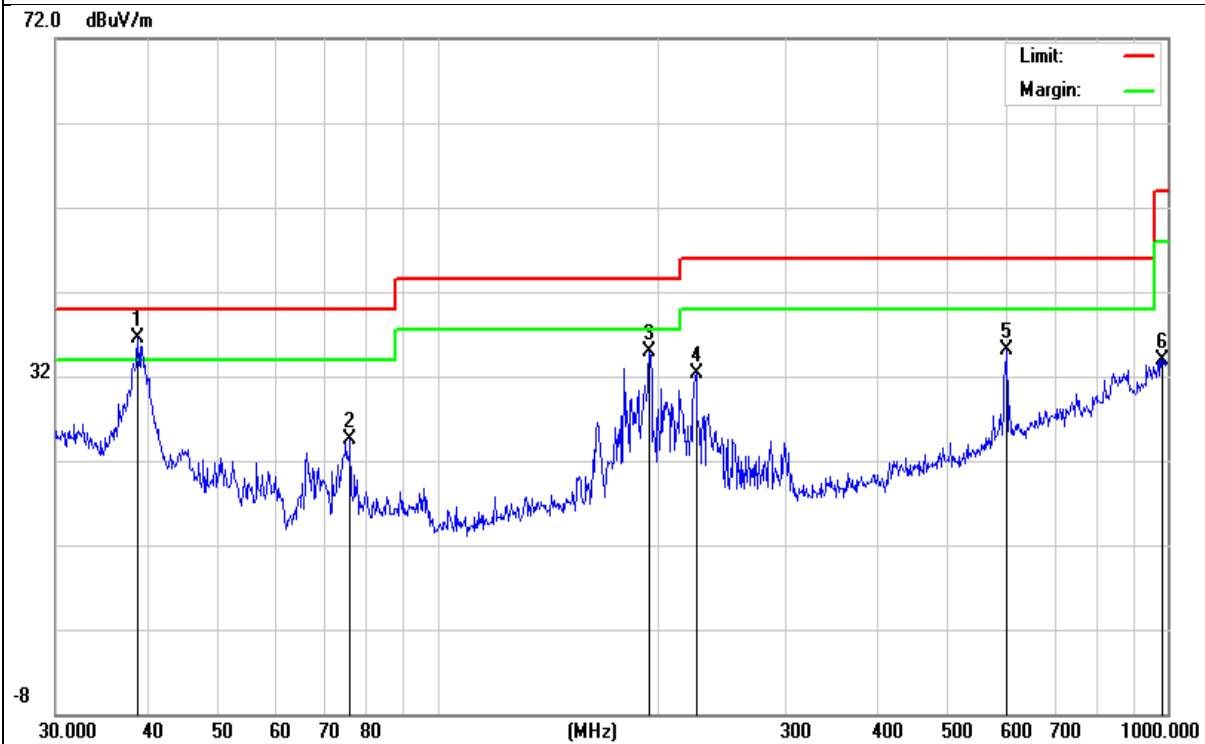


EUT:	Tablet PC	Model Name :	V10
Temperature:	25 °C	Relative Humidity:	55%
Pressure:	1010 hPa	Test Date :	2017-11-01
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	DC 5V from PC AC120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	38.8878	19.54	16.94	36.48	40.00	-3.52	QP
V	75.9773	13.03	11.56	24.59	40.00	-15.41	QP
V	195.1365	21.19	13.74	34.93	43.50	-8.57	QP
V	226.0994	20.05	12.16	32.21	46.00	-13.79	QP
V	601.4265	16.26	18.81	35.07	46.00	-10.93	QP
V	982.6200	6.29	27.60	33.89	54.00	-20.11	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.



3.2.5 TEST RESULTS(1000~6000MHz)

EUT:	Tablet PC	Model Name :	V10
Temperature:	25 °C	Relative Humidity:	55%
Pressure:	1010 hPa	Test Date :	2017-11-01
Test Mode :	Mode 1		
Test Power :	DC 5V from PC AC120V/60Hz		

All the modulation modes have been tested, and the worst result was report as below:

Polar (H/V)	Frequency	Reading	Correct	Result	Limit	Over Limit	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
V	1091.77	43.51	-10.48	33.03	74	-40.97	Pk
V	1324.86	44.39	-10.37	34.02	74	-39.98	Pk
V	2111	36.09	-6.09	30	74	-44	Pk
V	3153.52	35.9	-4.44	31.46	74	-42.54	Pk
V	4074.47	35.69	0.22	35.91	74	-38.09	Pk
V	5226.77	33.51	4.71	38.22	74	-35.78	Pk
H	1093.72	43.56	-10.45	33.11	74	-40.89	Pk
H	1327.24	43.49	-10.33	33.16	74	-40.84	Pk
H	1593.38	39.13	-9.22	29.91	74	-44.09	Pk
H	2099.69	37.4	-6.13	31.27	74	-42.73	Pk
H	3659.16	35.62	-2.53	33.09	74	-40.91	Pk
H	4909.06	34.46	4.79	39.25	74	-34.75	Pk

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

Note: Only the worst results data points are reported in the report.