

FCC RADIO TEST REPORT

FCC ID:2ASHJPT7010

Product : POS Terminal

Trade Mark : N/A

Model Name : PT7010

Family Model : PT7010S, PT7010M, PT7010MS,
PT7010T, PT7010ST, PT7010MT,
PT7010MST, PT7003, PT7006,
PT7009, PT8001, Q5, Q6, Q7, Q8, Q9

Report No. : S24032201806004

Prepared for

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Room901,Zhenhua Times Square,21 Heping RoadLongHua
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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name : Tousei Anlinx Co.,Ltd.

Address : Room901,Zhenhua Times Square,21 Heping RoadLongHua district,ShenzhenCity,China 518109

Manufacturer's Name..... : Tousei Anlinx Co.,Ltd.

Address : Room901,Zhenhua Times Square,21 Heping RoadLongHua district,ShenzhenCity,China 518109

Product description

Product name..... : POS Terminal

Model and/or type reference : PT7010

Family Model..... : PT7010S, PT7010M, PT7010MS, PT7010T, PT7010ST, PT7010MT, PT7010MST, PT7003, PT7006, PT7009, PT8001, Q5, Q6, Q7, Q8, Q9

Sample number : S240322018005

Standards : FCC Part15.407

Test procedure ANSI C63.10-2013 and KDB 789033 D02 General UNII Test Procedures New Rules v02r01

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements/ the Industry Canada requirements.. And it is applicable only to the tested sample identified in the report.

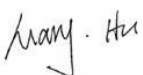
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Date of Test

Date (s) of performance of tests Mar. 25, 2024 ~ Jul. 25, 2024

Date of Issue..... Jul. 25, 2024

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

Prepared : 
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(Project Engineer)

Reviewed : 
By : Aaron Cheng
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Approved : 
By : Alex Li
(Manager)

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Revision History

Report No.	Version	Description	Issued Date
S24032201806004	Rev.01	Initial issue of report	Jul. 25, 2024

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
15.207	AC Power Line Conducted Emissions	PASS	
15.209(a), 15.407 (b)(1) 15.407 (b)(2) 15.407 (b)(3) 15.407 (b)(4) 15.407(b)(8)(9)	Spurious Radiated Emissions	PASS	
15.407 (a)	26 dB and 99% Emission Bandwidth	PASS	
15.407(e)	Minimum 6 dB bandwidth	PASS	
15.407 (a)	Maximum Conducted Output Power	PASS	
15.407 (b)(1) 15.407 (b)(2) 15.407 (b)(3) 15.407 (b)(4)	Band Edge	PASS	
15.407 (a)	Power Spectral Density	PASS	
15.407(b)	Spurious Emissions at Antenna Terminals	PASS	
15.407(g)	Frequency Stability Measurement	PASS	
15.407(h)	Dynamic Frequency Selection(DFS)	PASS	
15.203	Antenna Requirement	PASS	
15.407(c)	Automatically discontinue transmission	PASS	(Note 3)

NOTE:

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

1.1 FACILITIES AND ACCREDITATIONS

FACILITIES

All measurement facilities used to collect the measurement data are located at 1&5/F, Building C, 1&2/F, Building E, Fenda Science Park, Sanwei Community, Hangcheng Street, Baoan District, Shenzhen ,Guangdong, China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

CNAS-Lab. : The Certificate Registration Number is L5516.

IC-Registration : The Certificate Registration Number is 9270A.
CAB identifier:CN0074

FCC- Accredited : Test Firm Registration Number: 463705.
Designation Number: CN1184

A2LA-Lab. : The Certificate Registration Number is 4298.01
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Name of Firm : Shenzhen NTEK Testing Technology Co., Ltd.

Site Location : 1&5/F, Building C, 1&2/F, Building E, Fenda Science Park, Sanwei Community, Hangcheng Street, Baoan District, Shenzhen ,Guangdong, China.

1.2 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 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 2.80\text{dB}$
2	RF power, conducted	$\pm 0.16\text{dB}$
3	Spurious emissions, conducted	$\pm 0.21\text{dB}$
4	All emissions, radiated(30MHz~1GHz)	$\pm 2.64\text{dB}$
5	All emissions, radiated(1GHz~6GHz)	$\pm 2.40\text{dB}$
6	All emissions, radiated(> 6GHz)	$\pm 2.52\text{dB}$
7	Temperature	$\pm 0.5^\circ\text{C}$
8	Humidity	$\pm 2\%$
9	All emissions, radiated(9KHz~30MHz)	$\pm 6\text{dB}$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	POS Terminal																		
Trade Mark	N/A																		
Model Name	PT7010																		
Family Model	PT7010S, PT7010M, PT7010MS, PT7010T, PT7010ST, PT7010MT, PT7010MST, PT7003, PT7006, PT7009, PT8001, Q5, Q6, Q7, Q8, Q9																		
Model Difference	All models are the same circuit and RF module, except for model names, appearances and colors.																		
FCC ID	2ASHJPT7010																		
Product Description	<table border="1"> <tr> <td>Mode Supported</td><td> ☒802.11a ☒802.11n(HT20/ HT40) ☒802.11ac(HT20) ☒802.11ac(VHT20/VHT40/VHT80) </td></tr> <tr> <td>Data Rate</td><td> 802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS9 </td></tr> <tr> <td>Modulation</td><td>OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac/ax;</td></tr> <tr> <td>Operating Frequency Range</td><td> ☒ U-NII-1: 5150 MHz ~5250MHz ☒ U-NII-2A: 5250MHz~5350MHz ☒ U-NII-2C: 5470MHz~5725MHz ☒ U-NII-3: 5725 MHz ~5850 MHz </td></tr> <tr> <td>Function:</td><td> ☐Outdoor AP ☐Indoor AP ☐Fixed P2P ☒Client </td></tr> <tr> <td>DFS type:</td><td> ☐master devices ☐Slave devices with radar detection ☒Slave devices without radar detection </td></tr> <tr> <td>Support TPC</td><td> ☐YES ☒NO </td></tr> <tr> <td>Antenna Type</td><td>Antenna : FPC antenna</td></tr> <tr> <td>Antenna Gain</td><td>Antenna: 1.83 dBi</td></tr> </table> Based on the application, features, or specification exhibited in User's Manual, More details of EUT technical specification, please refer to the User's Manual.	Mode Supported	☒ 802.11a ☒ 802.11n(HT20/ HT40) ☒ 802.11ac(HT20) ☒ 802.11ac(VHT20/VHT40/VHT80)	Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS9	Modulation	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac/ax;	Operating Frequency Range	☒ U-NII-1: 5150 MHz ~5250MHz ☒ U-NII-2A: 5250MHz~5350MHz ☒ U-NII-2C: 5470MHz~5725MHz ☒ U-NII-3: 5725 MHz ~5850 MHz	Function:	☐ Outdoor AP ☐ Indoor AP ☐ Fixed P2P ☒ Client	DFS type:	☐ master devices ☐ Slave devices with radar detection ☒ Slave devices without radar detection	Support TPC	☐ YES ☒ NO	Antenna Type	Antenna : FPC antenna	Antenna Gain	Antenna: 1.83 dBi
Mode Supported	☒ 802.11a ☒ 802.11n(HT20/ HT40) ☒ 802.11ac(HT20) ☒ 802.11ac(VHT20/VHT40/VHT80)																		
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS9																		
Modulation	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac/ax;																		
Operating Frequency Range	☒ U-NII-1: 5150 MHz ~5250MHz ☒ U-NII-2A: 5250MHz~5350MHz ☒ U-NII-2C: 5470MHz~5725MHz ☒ U-NII-3: 5725 MHz ~5850 MHz																		
Function:	☐ Outdoor AP ☐ Indoor AP ☐ Fixed P2P ☒ Client																		
DFS type:	☐ master devices ☐ Slave devices with radar detection ☒ Slave devices without radar detection																		
Support TPC	☐ YES ☒ NO																		
Antenna Type	Antenna : FPC antenna																		
Antenna Gain	Antenna: 1.83 dBi																		

Adapter	Adapter 1: Model: GA-0502000 Input: 100-240V~50/60Hz 0.6A Max Output: 5.0V $\overline{\text{---}}$ 2.0A Adapter 2: Model: FJ-GN2048A0503000D Input: 100-240V~50/60Hz 1.5A Max Output: 5.0V $\overline{\text{---}}$ 3.0A 15.0W Max
Battery	DC 3.7V, 7750mAh, 28.67Wh
Power supply	DC 3.7V from battery or DC 5V from adapter
Connecting I/O Port(s)	Please refer to the User's Manual
HW Version	V 1.00
SW Version	v1.07

Note:

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

Band	20MHz		40MHz		80MHz	
	Channel	Frequency	Channel	Frequency	Channel	Frequency
U-NII-1	36	5180 MHz	38	5190 MHz	42	5210 MHz
	40	5200 MHz	46	5230 MHz	-	-
	44	5220 MHz				
	48	5240 MHz				
U-NII-2A	52	5260 MHz	54	5270 MHz	58	5290 MHz
	56	5280 MHz	62	5310 MHz		
	60	5300 MHz				
	64	5320 MHz				
U-NII-2C	100	5500 MHz	102	5510 MHz	106	5530 MHz
	104	5520 MHz	110	5550 MHz	122	5610 MHz
	108	5540 MHz	118	5590 MHz		
	112	5560 MHz	126	5630 MHz		
	116	5580 MHz	134	5670 MHz		
	120	5600 MHz				
	124	5620 MHz				
	128	5640 MHz				
	132	5660 MHz				
	136	5680 MHz				
U-NII-3	140	5700 MHz				
	149	5745 MHz	151	5755 MHz	155	5775 MHz
	153	5765 MHz	159	5795 MHz		
	157	5785 MHz				
	161	5805 MHz				
	165	5825 MHz				

Table for Filed Antenna

Antenna	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	FPC antenna	IPEX	1.83	Wifi Antenna

2.2 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 Mode	Description
Mode 1	Normal Link Mode
Mode 2	802.11a / n/ ac CH36/ CH40/ CH48/CH52/CH56/CH64/CH100/CH120/CH140/CH149/ CH157/CH165
Mode 3	802.11n40 CH38/CH46/CH54/CH62/CH102/CH118/CH134/CH151/ CH159
Mode 4	802.11ac80 CH42/CH58/CH106/CH122/CH155

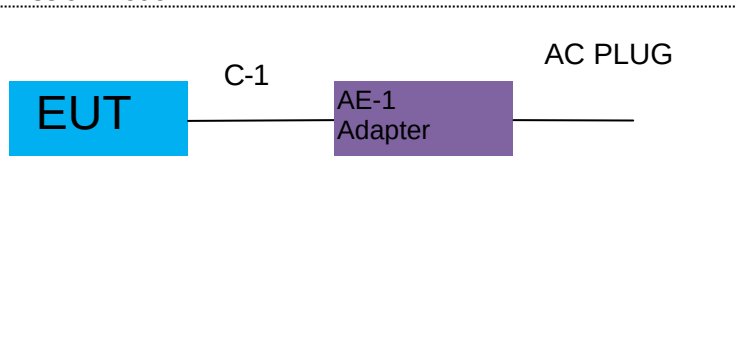
For Radiated Emission	
Final Test Mode	Description
Mode 1	Normal Link Mode
Mode 2	802.11a / n/ ac20 CH36/ CH40/ CH48/CH52/CH56/CH64/CH100/CH120/CH140/CH149/ CH157/CH165
Mode 3	802.11n40/ac40 CH38/CH46/CH54/CH62/CH102/CH118/CH134/CH151/ CH159
Mode 4	802.11ac80 CH42/CH58/CH106/CH122/CH155

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

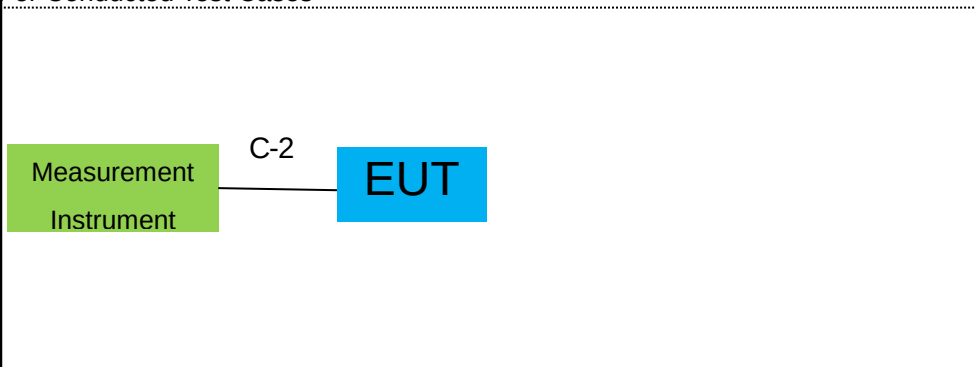
For AC Conducted Emission Mode



For Radiated Test Cases



For Conducted Test Cases



Note:1.The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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	Model/Type No.	Series No.	Note
AE-1	Adapter	GA-0502000	N/A	Peripherals
AE-2	Adapter	FJ-GN2048A0503000D	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	USB Cable	NO	NO	1.0m
C-2	RF Cable	YES	NO	0.1m

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.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation& Conducted Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2024.03.12	2025.03.11	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2023.05.29 2024.04.26	2024.05.28 2025.04.25	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2023.05.29 2024.04.26	2024.05.28 2025.04.25	1 year
4	Test Receiver	R&S	ESPI7	101318	2024.03.12	2025.03.11	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2024.03.11	2025.03.10	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
7	Horn Antenna	EM	EM-AH-10180	2011071402	2022.03.31	2025.03.30	3 year
8	Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	803	2022.11.07	2025.11.06	1 year
9	Amplifier	EMC	EMC051835SE	980246	2024.01.23	2025.01.22	1 year
10	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	055	2023.11.03	2026.11.02	1 year
11	Power Meter	DARE	RPR3006W	15I00041SN084	2023.05.29 2024.04.25	2024.05.28 2025.04.24	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2023.05.06	2026.05.05	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2023.05.06	2026.05.05	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2022.06.17	2025.06.16	3 year
15	Filter	TRILTHIC	2400MHz	29	2023.03.26	2026.03.25	1 year
16	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

Note:

We will use the temporary antenna connector (soldered on the PCB board) When conducted test
And this temporary antenna connector is listed within the instrument list

AC 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	2024.03.12	2025.03.11	1 year
2	LISN	R&S	ENV216	101313	2024.03.12	2025.03.11	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2024.03.12	2025.03.11	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2023.05.06	2026.05.05	3 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2023.05.06	2026.05.05	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2023.05.06	2026.05.05	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2023.05.06	2026.05.05	3 year

Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable& Aux Equipment which is scheduled for calibration every 3 years.

3. TEST REQUIREMENTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 APPLICABLE STANDARD

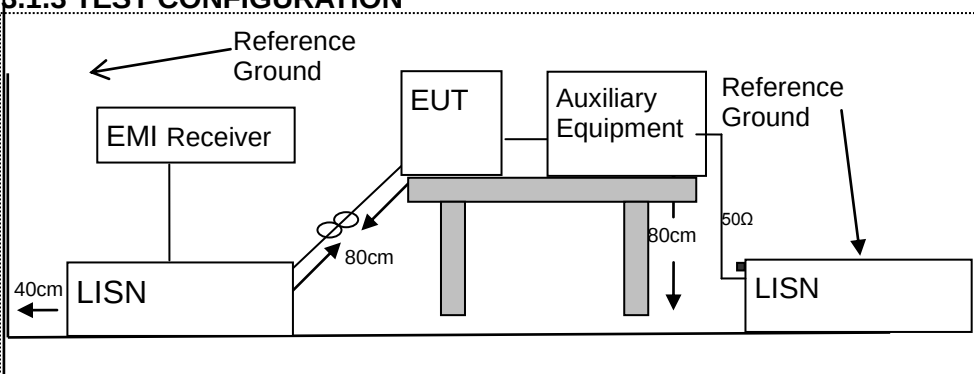
According to FCC Part 15.207(a)

3.1.2 CONFORMANCE LIMIT

Frequency(MHz)	Conducted Emission Limit	
	Quasi-peak	Average
0.15-0.5	66-56*	56-46*
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. *Decreases with the logarithm of the frequency
 2. The lower limit shall apply at the transition frequencies
 3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3.1.3 TEST CONFIGURATION



3.1.4 TEST PROCEDURE

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room.
2. The EUT was placed on a table which is 0.8m above ground plane.
3. Connect EUT 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.
4. 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 40cm long.
5. 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.
6. LISN at least 80 cm from nearest part of EUT chassis.
7. The frequency range from 150KHz to 30MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth(IF bandwidth=9KHz) with Maximum Hold Mode
9. For the actual test configuration, please refer to the related Item –EUT Test Photos.

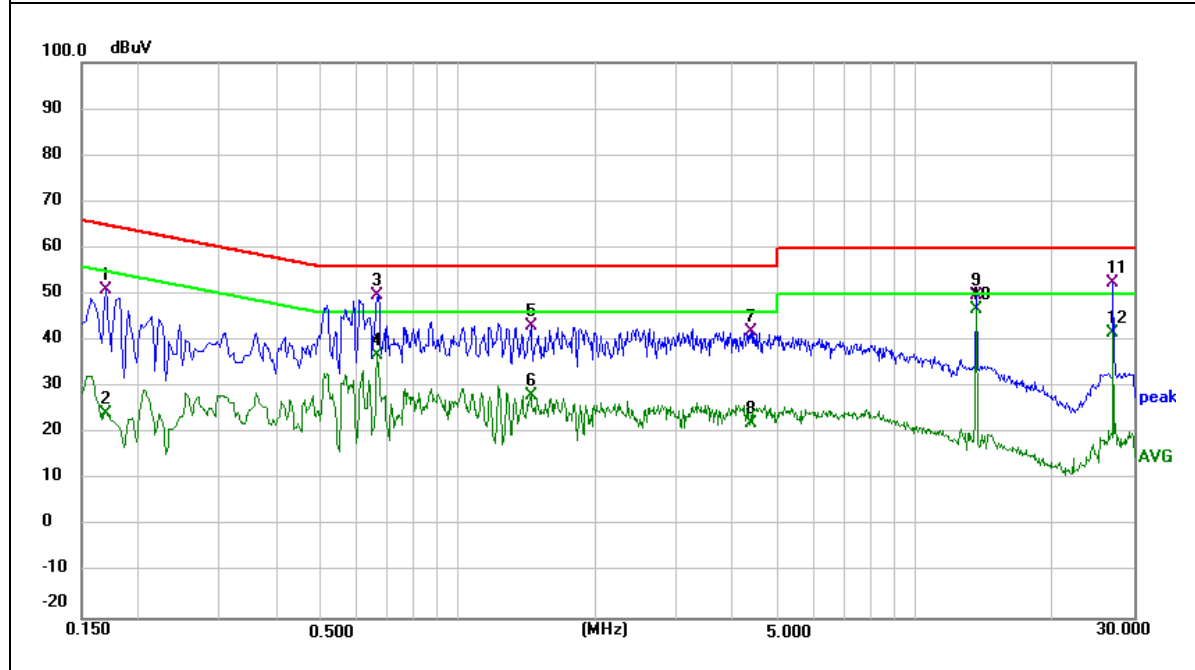
3.1.5 TEST RESULTS

EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.2G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1700	41.00	9.97	50.97	64.96	-13.99	QP
0.1700	14.21	9.97	24.18	54.96	-30.78	AVG
0.6660	38.68	10.99	49.67	56.00	-6.33	QP
0.6660	25.72	10.99	36.71	46.00	-9.29	AVG
1.4420	30.67	12.54	43.21	56.00	-12.79	QP
1.4420	15.51	12.54	28.05	46.00	-17.95	AVG
4.3740	32.32	9.67	41.99	56.00	-14.01	QP
4.3740	12.49	9.67	22.16	46.00	-23.84	AVG
13.5617	39.97	9.70	49.67	60.00	-10.33	QP
13.5617	37.05	9.70	46.75	50.00	-3.25	AVG
27.1220	42.75	9.60	52.35	60.00	-7.65	QP
27.1220	32.09	9.60	41.69	50.00	-8.31	AVG

Remark:

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

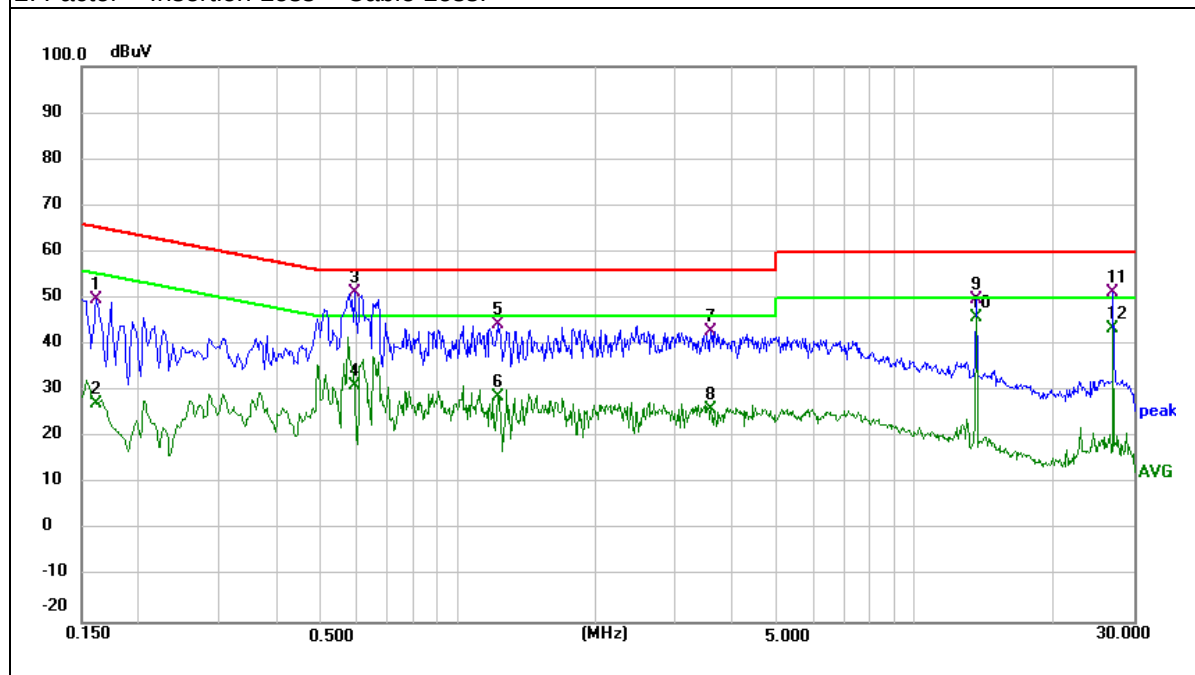


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22℃	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.2G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1620	39.77	9.95	49.72	65.36	-15.64	QP
0.1620	17.38	9.95	27.33	55.36	-28.03	AVG
0.5940	40.41	10.83	51.24	56.00	-4.76	QP
0.5940	20.36	10.83	31.19	46.00	-14.81	AVG
1.2220	32.37	12.10	44.47	56.00	-11.53	QP
1.2220	16.78	12.10	28.88	46.00	-17.12	AVG
3.5700	33.27	9.67	42.94	56.00	-13.06	QP
3.5700	16.30	9.67	25.97	46.00	-20.03	AVG
13.5617	40.04	9.70	49.74	60.00	-10.26	QP
13.5617	36.20	9.70	45.90	50.00	-4.10	AVG
27.1220	41.69	9.60	51.29	60.00	-8.71	QP
27.1220	33.72	9.60	43.32	50.00	-6.68	AVG

Remark:

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

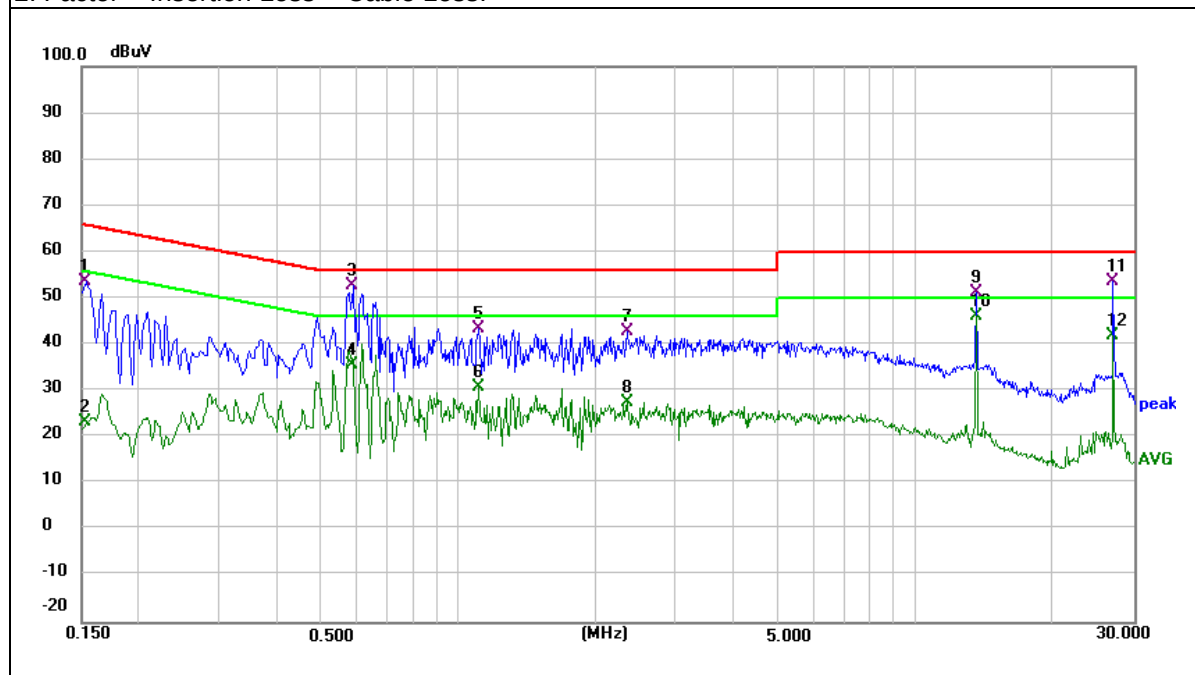


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.3G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1539	43.75	9.93	53.68	65.79	-12.11	QP
0.1539	13.47	9.93	23.40	55.79	-32.39	AVG
0.5899	41.82	10.83	52.65	56.00	-3.35	QP
0.5899	24.97	10.83	35.80	46.00	-10.20	AVG
1.1100	31.49	11.88	43.37	56.00	-12.63	QP
1.1100	18.93	11.88	30.81	46.00	-15.19	AVG
2.3420	33.12	9.66	42.78	56.00	-13.22	QP
2.3420	18.01	9.66	27.67	46.00	-18.33	AVG
13.5620	41.42	9.70	51.12	60.00	-8.88	QP
13.5620	36.55	9.70	46.25	50.00	-3.75	AVG
27.1220	44.00	9.60	53.60	60.00	-6.40	QP
27.1220	32.31	9.60	41.91	50.00	-8.09	AVG

Remark:

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

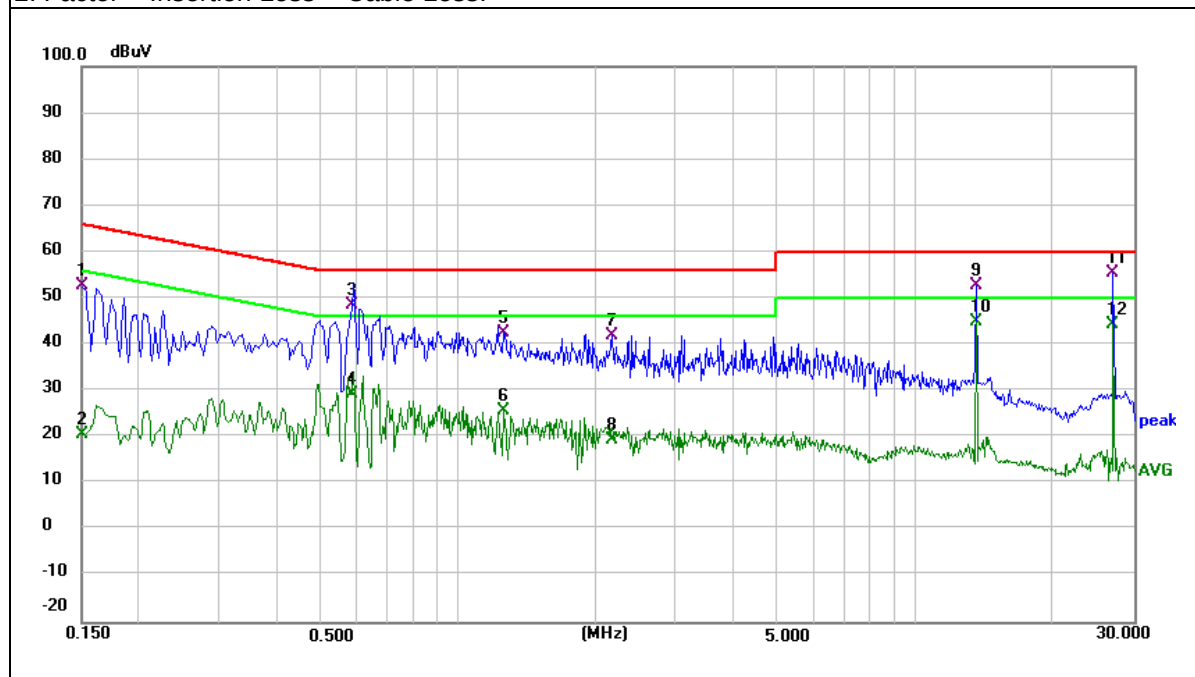


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.3G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1500	42.84	9.93	52.77	66.00	-13.23	QP
0.1500	10.59	9.93	20.52	56.00	-35.48	AVG
0.5860	37.67	10.83	48.50	56.00	-7.50	QP
0.5860	18.56	10.83	29.39	46.00	-16.61	AVG
1.2620	30.42	12.18	42.60	56.00	-13.40	QP
1.2620	13.49	12.18	25.67	46.00	-20.33	AVG
2.1700	32.32	9.66	41.98	56.00	-14.02	QP
2.1700	9.70	9.66	19.36	46.00	-26.64	AVG
13.5620	43.18	9.70	52.88	60.00	-7.12	QP
13.5620	35.38	9.70	45.08	50.00	-4.92	AVG
27.1220	45.88	9.60	55.48	60.00	-4.52	QP
27.1220	34.89	9.60	44.49	50.00	-5.51	AVG

Remark:

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

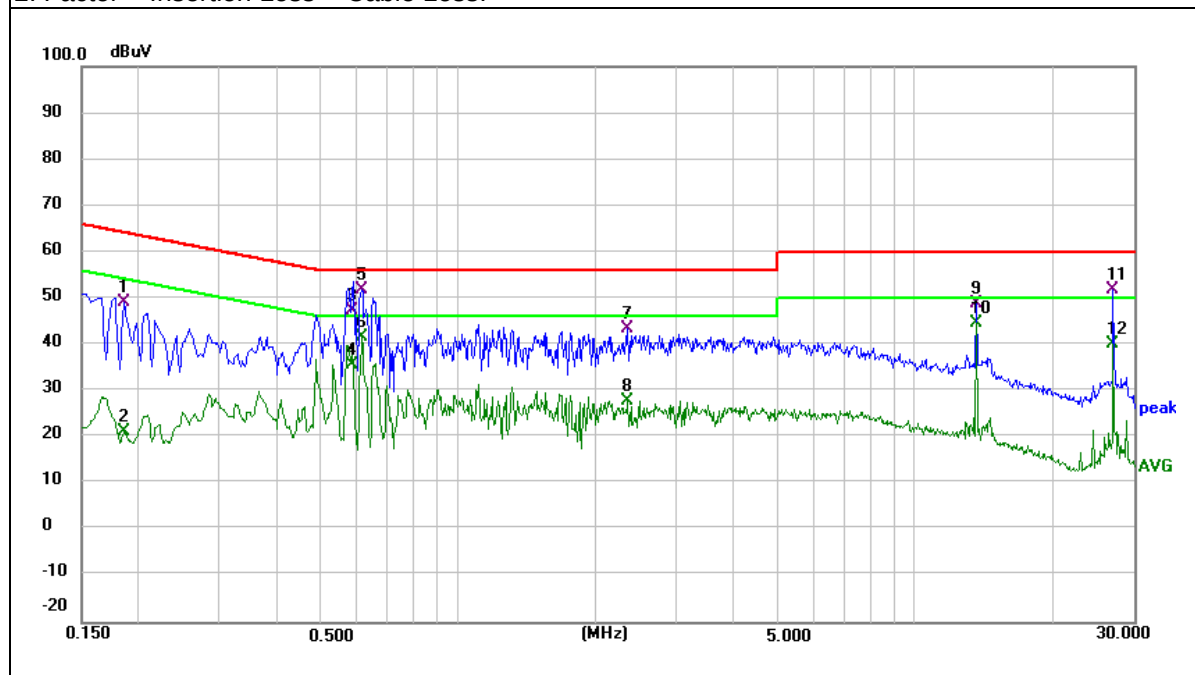


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.6G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1860	39.19	10.01	49.20	64.21	-15.01	QP
0.1860	11.37	10.01	21.38	54.21	-32.83	AVG
0.5899	36.47	10.83	47.30	56.00	-8.70	QP
0.5899	24.80	10.83	35.63	46.00	-10.37	AVG
0.6140	40.89	10.87	51.76	56.00	-4.24	QP
0.6140	30.88	10.87	41.75	46.00	-4.25	AVG
2.3460	33.85	9.66	43.51	56.00	-12.49	QP
2.3460	18.10	9.66	27.76	46.00	-18.24	AVG
13.5620	39.28	9.70	48.98	60.00	-11.02	QP
13.5620	35.07	9.70	44.77	50.00	-5.23	AVG
27.1220	42.12	9.60	51.72	60.00	-8.28	QP
27.1220	30.55	9.60	40.15	50.00	-9.85	AVG

Remark:

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

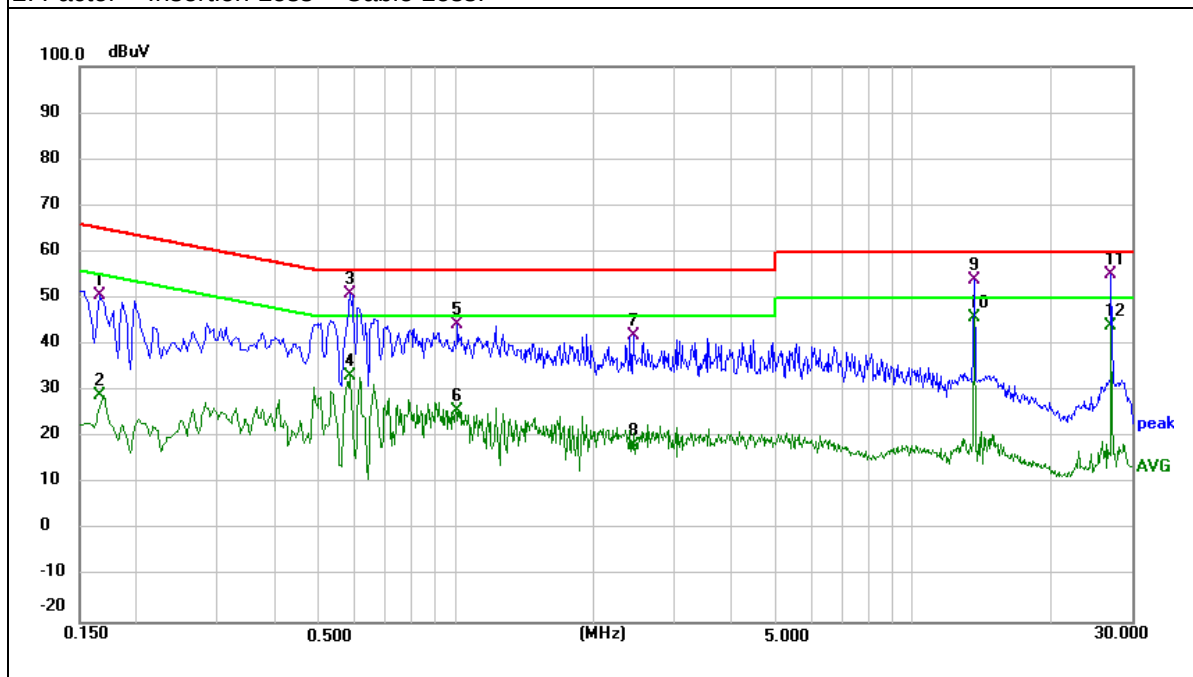


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.6G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1660	40.56	9.97	50.53	65.16	-14.63	QP
0.1660	18.98	9.97	28.95	55.16	-26.21	AVG
0.5860	40.06	10.83	50.89	56.00	-5.11	QP
0.5860	22.30	10.83	33.13	46.00	-12.87	AVG
1.0100	32.62	11.68	44.30	56.00	-11.70	QP
1.0100	13.98	11.68	25.66	46.00	-20.34	AVG
2.4420	32.23	9.66	41.89	56.00	-14.11	QP
2.4420	8.60	9.66	18.26	46.00	-27.74	AVG
13.5620	44.31	9.70	54.01	60.00	-5.99	QP
13.5620	36.15	9.70	45.85	50.00	-4.15	AVG
27.1220	45.61	9.60	55.21	60.00	-4.79	QP
27.1220	34.35	9.60	43.95	50.00	-6.05	AVG

Remark:

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

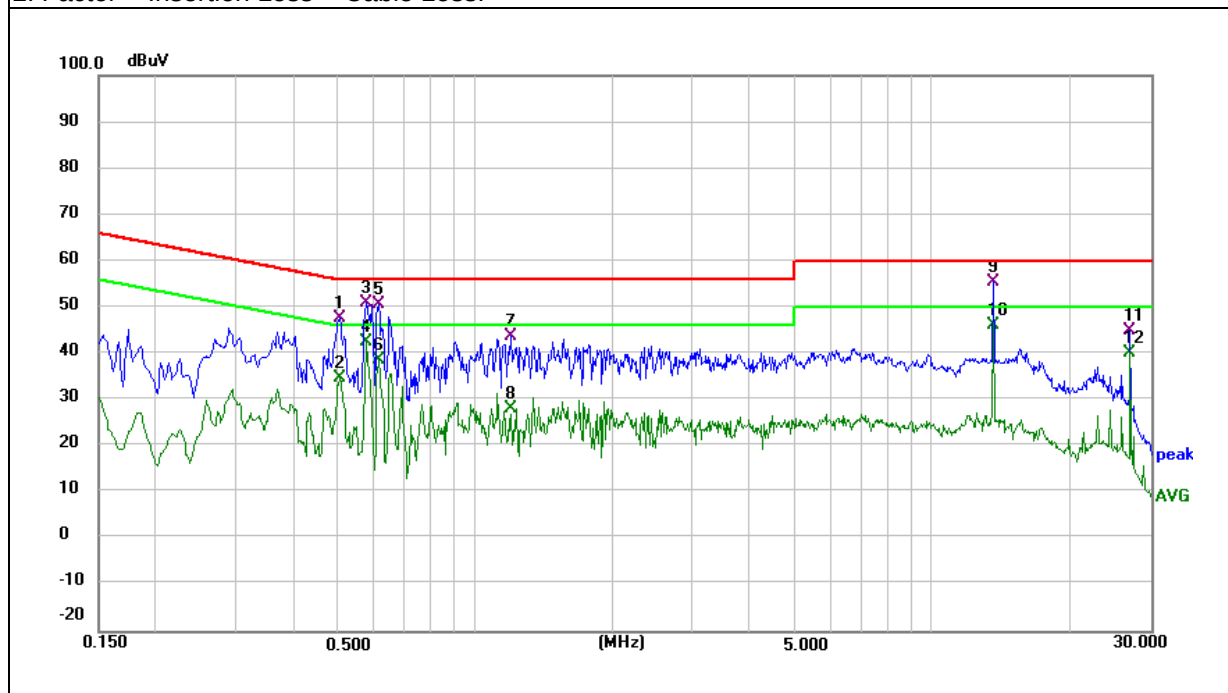


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22 °C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.8G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.5060	37.12	10.67	47.79	56.00	-8.21	QP
0.5060	24.07	10.67	34.74	46.00	-11.26	AVG
0.5780	40.18	10.81	50.99	56.00	-5.01	QP
0.5780	31.73	10.81	42.54	46.00	-3.46	AVG
0.6140	39.81	10.87	50.68	56.00	-5.32	QP
0.6140	27.77	10.87	38.64	46.00	-7.36	AVG
1.1980	31.63	12.06	43.69	56.00	-12.31	QP
1.1980	16.22	12.06	28.28	46.00	-17.72	AVG
13.5620	45.69	9.70	55.39	60.00	-4.61	QP
13.5620	36.45	9.70	46.15	50.00	-3.85	AVG
27.1220	35.33	9.60	44.93	60.00	-15.07	QP
27.1220	30.66	9.60	40.26	50.00	-9.74	AVG

Remark:

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

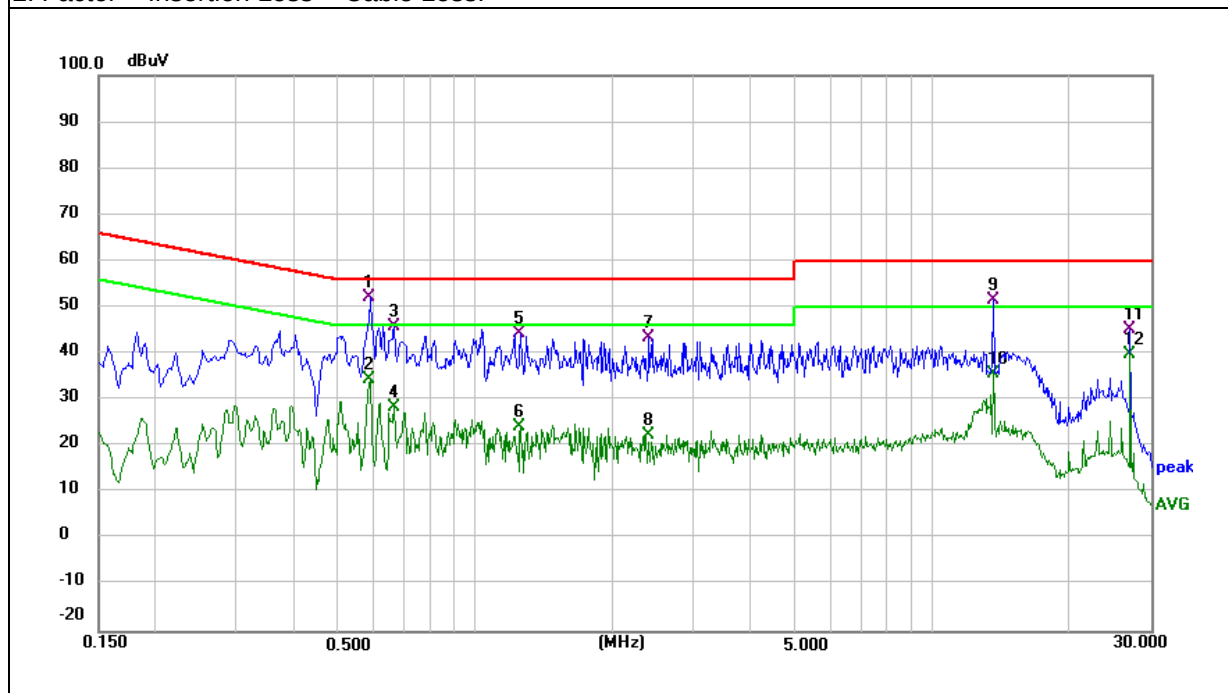


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22 °C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter1 AC 120V/60Hz	Test Mode :	Mode 1(5.8G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.5899	41.31	10.83	52.14	56.00	-3.86	QP
0.5899	23.55	10.83	34.38	46.00	-11.62	AVG
0.6660	34.72	10.99	45.71	56.00	-10.29	QP
0.6660	17.55	10.99	28.54	46.00	-17.46	AVG
1.2579	32.27	12.18	44.45	56.00	-11.55	QP
1.2579	11.96	12.18	24.14	46.00	-21.86	AVG
2.4020	33.76	9.66	43.42	56.00	-12.58	QP
2.4020	12.76	9.66	22.42	46.00	-23.58	AVG
13.5580	41.72	9.70	51.42	60.00	-8.58	QP
13.5580	25.84	9.70	35.54	50.00	-14.46	AVG
27.1220	35.51	9.60	45.11	60.00	-14.89	QP
27.1220	30.32	9.60	39.92	50.00	-10.08	AVG

Remark:

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

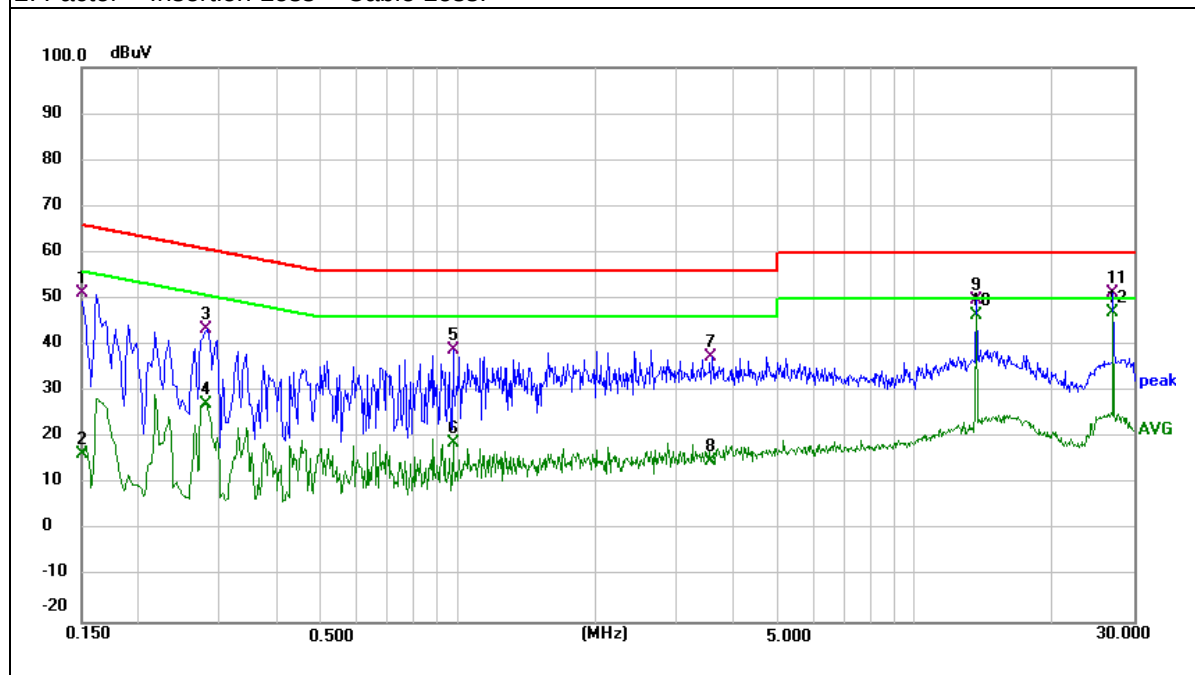


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.2G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1500	41.26	9.93	51.19	66.00	-14.81	QP
0.1500	6.57	9.93	16.50	56.00	-39.50	AVG
0.2819	33.17	10.20	43.37	60.76	-17.39	QP
0.2819	17.20	10.20	27.40	50.76	-23.36	AVG
0.9780	27.26	11.62	38.88	56.00	-17.12	QP
0.9780	7.36	11.62	18.98	46.00	-27.02	AVG
3.5660	27.81	9.67	37.48	56.00	-18.52	QP
3.5660	5.23	9.67	14.90	46.00	-31.10	AVG
13.5620	40.18	9.70	49.88	60.00	-10.12	QP
13.5620	36.76	9.70	46.46	50.00	-3.54	AVG
27.1220	41.65	9.60	51.25	60.00	-8.75	QP
27.1220	37.48	9.60	47.08	50.00	-2.92	AVG

Remark:

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

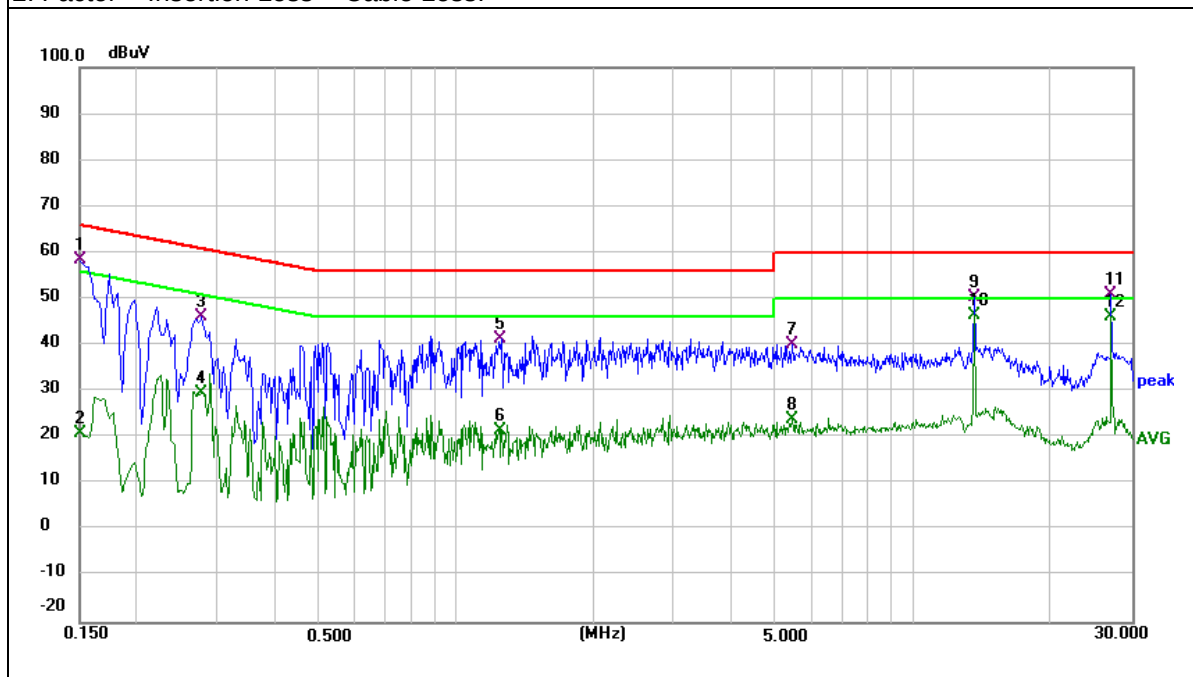


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.2G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1500	48.67	9.93	58.60	66.00	-7.40	QP
0.1500	10.89	9.93	20.82	56.00	-35.18	AVG
0.2759	35.89	10.20	46.09	60.94	-14.85	QP
0.2759	19.57	10.20	29.77	50.94	-21.17	AVG
1.2460	29.15	12.16	41.31	56.00	-14.69	QP
1.2460	9.32	12.16	21.48	46.00	-24.52	AVG
5.4460	30.62	9.67	40.29	60.00	-19.71	QP
5.4460	14.18	9.67	23.85	50.00	-26.15	AVG
13.5620	40.59	9.70	50.29	60.00	-9.71	QP
13.5620	36.72	9.70	46.42	50.00	-3.58	AVG
27.1220	41.37	9.60	50.97	60.00	-9.03	QP
27.1220	36.45	9.60	46.05	50.00	-3.95	AVG

Remark:

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

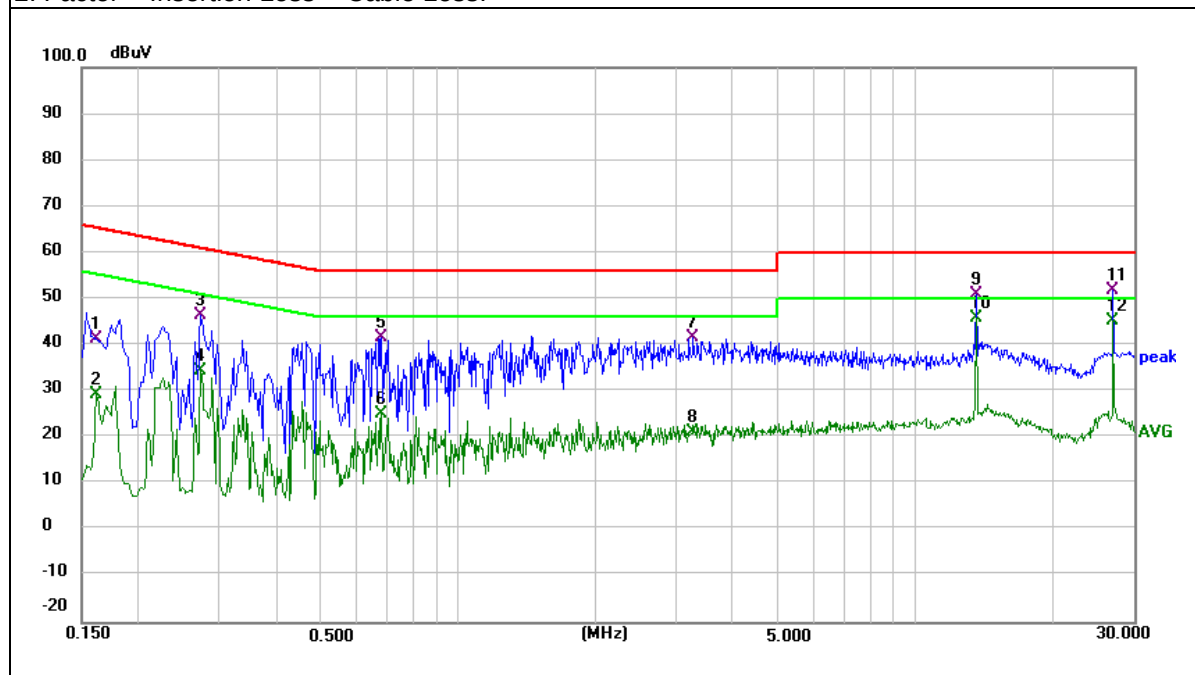


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.3G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1620	31.29	9.95	41.24	65.36	-24.12	QP
0.1620	19.33	9.95	29.28	55.36	-26.08	AVG
0.2740	36.20	10.18	46.38	61.00	-14.62	QP
0.2740	24.23	10.18	34.41	51.00	-16.59	AVG
0.6820	30.59	11.01	41.60	56.00	-14.40	QP
0.6820	14.09	11.01	25.10	46.00	-20.90	AVG
3.2700	32.08	9.67	41.75	56.00	-14.25	QP
3.2700	11.50	9.67	21.17	46.00	-24.83	AVG
13.5620	41.17	9.70	50.87	60.00	-9.13	QP
13.5620	36.29	9.70	45.99	50.00	-4.01	AVG
27.1220	42.35	9.60	51.95	60.00	-8.05	QP
27.1220	35.61	9.60	45.21	50.00	-4.79	AVG

Remark:

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

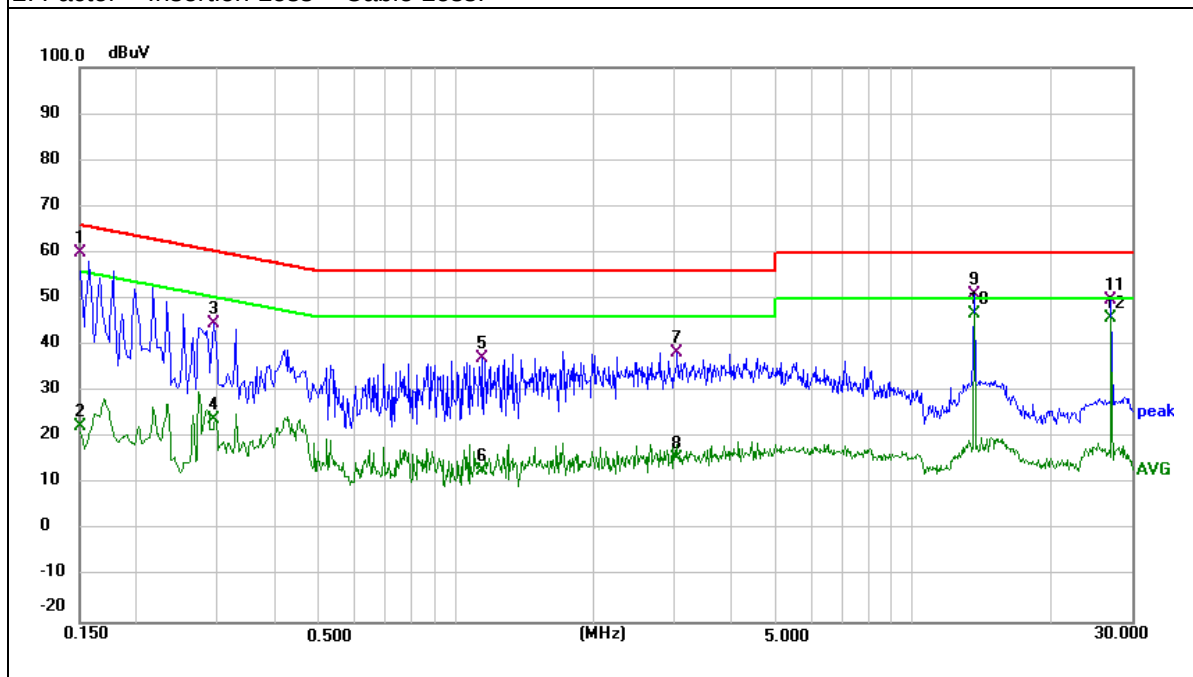


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.3G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1500	49.95	9.93	59.88	66.00	-6.12	QP
0.1500	12.41	9.93	22.34	56.00	-33.66	AVG
0.2940	34.50	10.22	44.72	60.41	-15.69	QP
0.2940	13.87	10.22	24.09	50.41	-26.32	AVG
1.1420	25.34	11.94	37.28	56.00	-18.72	QP
1.1420	1.02	11.94	12.96	46.00	-33.04	AVG
3.0540	28.63	9.67	38.30	56.00	-17.70	QP
3.0540	5.96	9.67	15.63	46.00	-30.37	AVG
13.5617	41.38	9.70	51.08	60.00	-8.92	QP
13.5617	37.13	9.70	46.83	50.00	-3.17	AVG
27.1220	40.25	9.60	49.85	60.00	-10.15	QP
27.1220	36.18	9.60	45.78	50.00	-4.22	AVG

Remark:

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

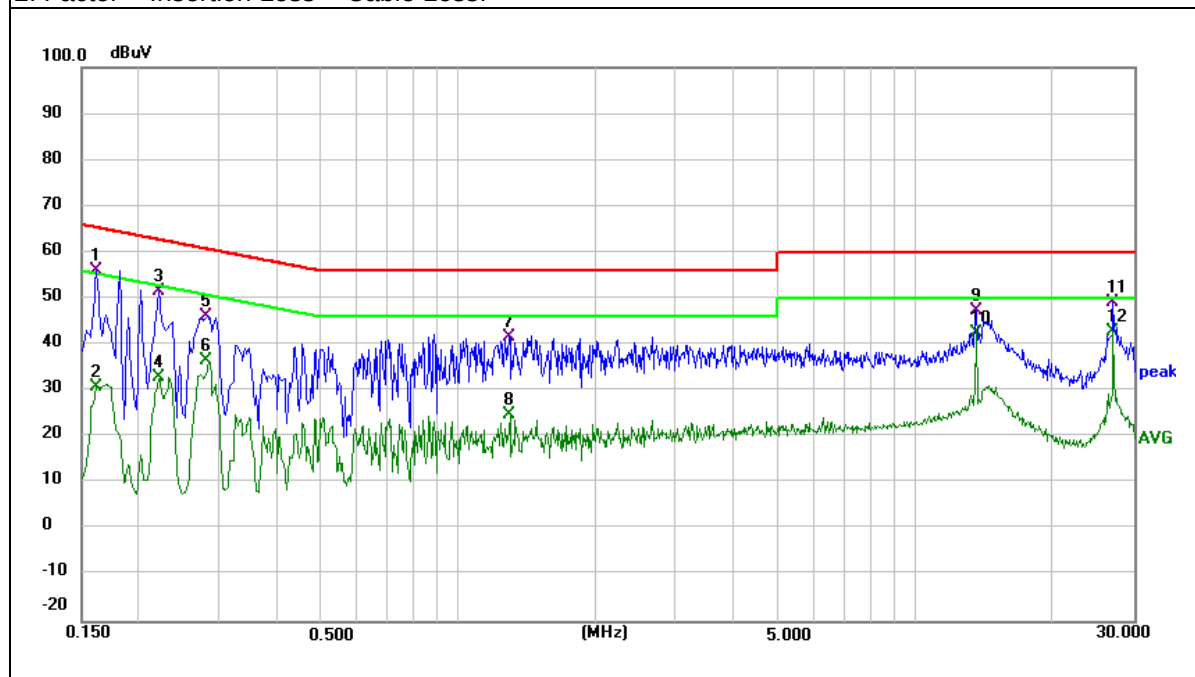


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.6G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1620	45.96	9.95	55.91	65.36	-9.45	QP
0.1620	20.98	9.95	30.93	55.36	-24.43	AVG
0.2220	41.38	10.08	51.46	62.74	-11.28	QP
0.2220	22.76	10.08	32.84	52.74	-19.90	AVG
0.2819	36.08	10.20	46.28	60.76	-14.48	QP
0.2819	26.40	10.20	36.60	50.76	-14.16	AVG
1.2900	29.53	12.24	41.77	56.00	-14.23	QP
1.2900	12.58	12.24	24.82	46.00	-21.18	AVG
13.5620	37.51	9.70	47.21	60.00	-12.79	QP
13.5620	32.81	9.70	42.51	50.00	-7.49	AVG
27.1220	39.66	9.60	49.26	60.00	-10.74	QP
27.1220	33.10	9.60	42.70	50.00	-7.30	AVG

Remark:

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

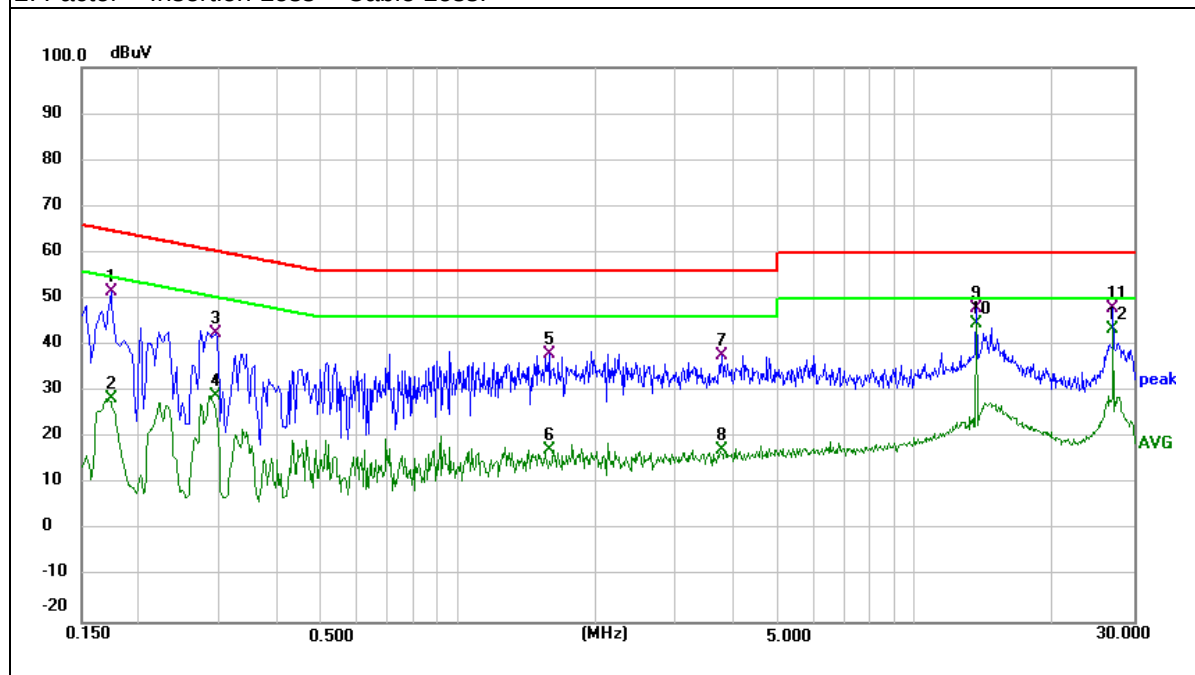


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22°C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.6G)

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1740	41.49	9.97	51.46	64.77	-13.31	QP
0.1740	18.53	9.97	28.50	54.77	-26.27	AVG
0.2940	32.39	10.22	42.61	60.41	-17.80	QP
0.2940	18.98	10.22	29.20	50.41	-21.21	AVG
1.5780	25.28	12.82	38.10	56.00	-17.90	QP
1.5780	4.49	12.82	17.31	46.00	-28.69	AVG
3.7620	28.22	9.67	37.89	56.00	-18.11	QP
3.7620	7.76	9.67	17.43	46.00	-28.57	AVG
13.5620	38.18	9.70	47.88	60.00	-12.12	QP
13.5620	34.84	9.70	44.54	50.00	-5.46	AVG
27.1220	38.21	9.60	47.81	60.00	-12.19	QP
27.1220	33.76	9.60	43.36	50.00	-6.64	AVG

Remark:

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

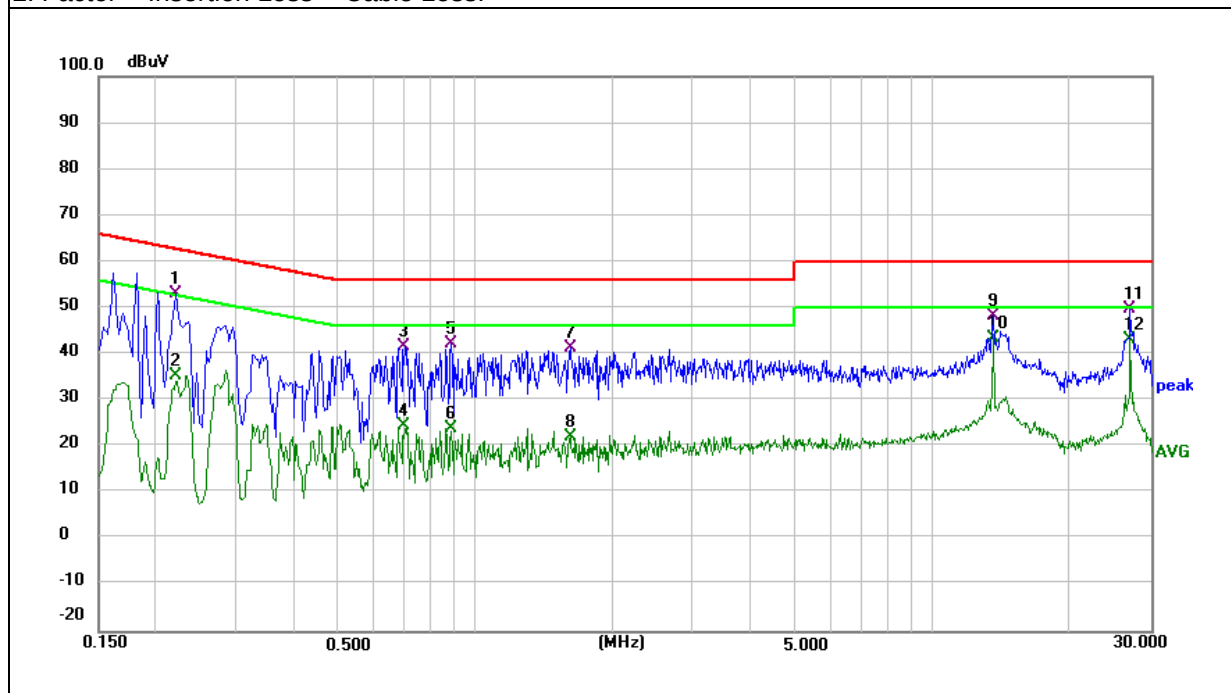


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22 °C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.8G)

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.2220	42.88	10.08	52.96	62.74	-9.78	QP
0.2220	25.26	10.08	35.34	52.74	-17.40	AVG
0.7019	30.51	11.05	41.56	56.00	-14.44	QP
0.7019	13.48	11.05	24.53	46.00	-21.47	AVG
0.8860	30.70	11.44	42.14	56.00	-13.86	QP
0.8860	12.51	11.44	23.95	46.00	-22.05	AVG
1.6140	28.52	12.88	41.40	56.00	-14.60	QP
1.6140	9.27	12.88	22.15	46.00	-23.85	AVG
13.5620	38.51	9.70	48.21	60.00	-11.79	QP
13.5620	33.81	9.70	43.51	50.00	-6.49	AVG
27.1220	40.16	9.60	49.76	60.00	-10.24	QP
27.1220	33.60	9.60	43.20	50.00	-6.80	AVG

Remark:

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

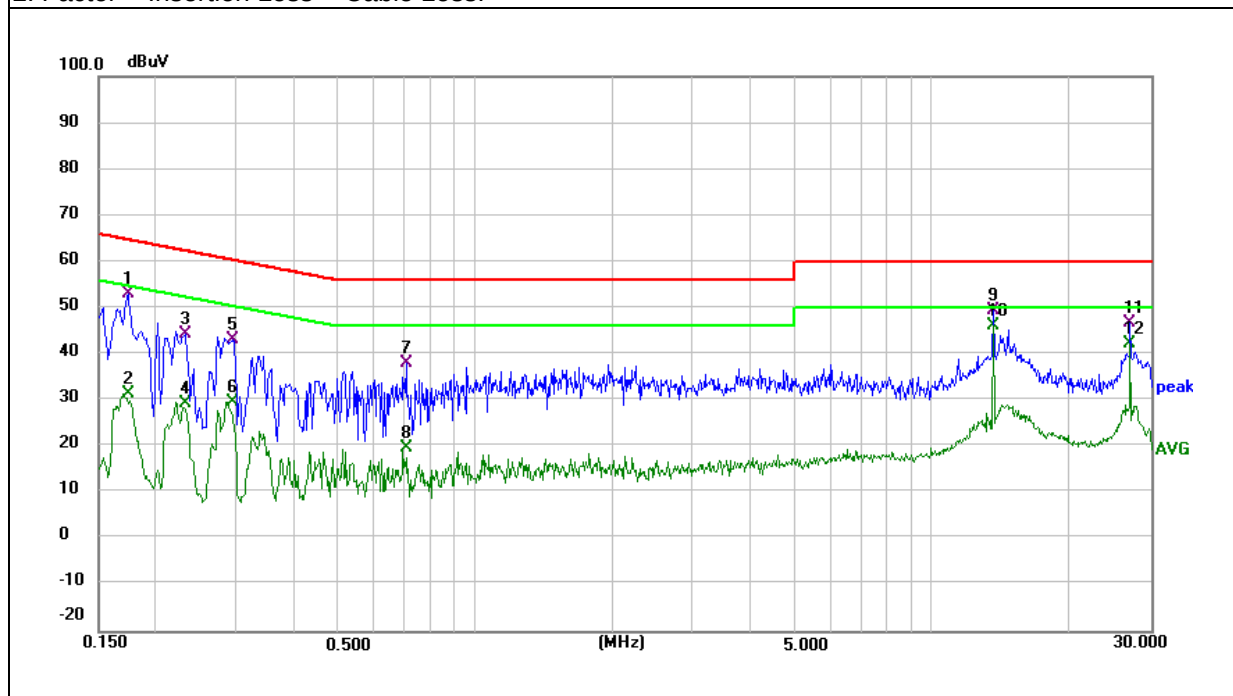


EUT :	POS Terminal	Model Name :	PT7010
Temperature :	22 °C	Relative Humidity :	57%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter2 AC 120V/60Hz	Test Mode :	Mode 1(5.8G)

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1740	42.99	9.97	52.96	64.77	-11.81	QP
0.1740	21.53	9.97	31.50	54.77	-23.27	AVG
0.2340	34.20	10.10	44.30	62.31	-18.01	QP
0.2340	19.40	10.10	29.50	52.31	-22.81	AVG
0.2940	32.89	10.22	43.11	60.41	-17.30	QP
0.2940	19.48	10.22	29.70	50.41	-20.71	AVG
0.7060	26.85	11.07	37.92	56.00	-18.08	QP
0.7060	8.78	11.07	19.85	46.00	-26.15	AVG
13.5620	39.68	9.70	49.38	60.00	-10.62	QP
13.5620	36.34	9.70	46.04	50.00	-3.96	AVG
27.1220	37.21	9.60	46.81	60.00	-13.19	QP
27.1220	32.76	9.60	42.36	50.00	-7.64	AVG

Remark:

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



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 APPLICABLE STANDARD

According to FCC Part 15.407(b) and 15.209

3.2.2 CONFORMANCE LIMIT

According to FCC Part 15.407(b)(7): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

According to FCC Part 15.205, Restricted bands

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Restricted Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Measurement Distance
0.009-0.490	2400/F(KHz)	20 log (uV/m)	300
0.490-1.705	24000/F(KHz)	20 log (uV/m)	30
1.705-30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

Frequency(MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Remark :1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. For Frequency 9kHz~30MHz:

Distance extrapolation factor =40log(Specific distance/ test distance)(dB);

Limit line=Specific limits(dBuV) + distance extrapolation factor.

For Frequency above 30MHz:

Distance extrapolation factor =20log(Specific distance/ test distance)(dB);

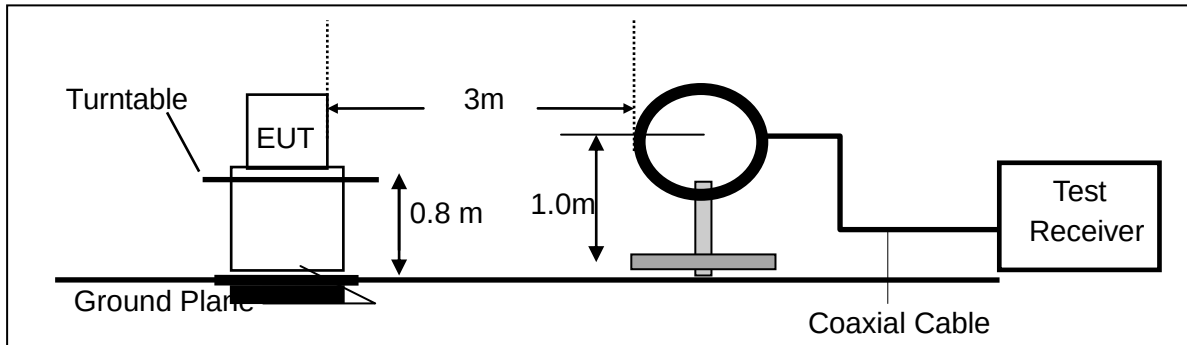
Limit line=Specific limits(dBuV) + distance extrapolation factor.

3.2.3 MEASURING INSTRUMENTS

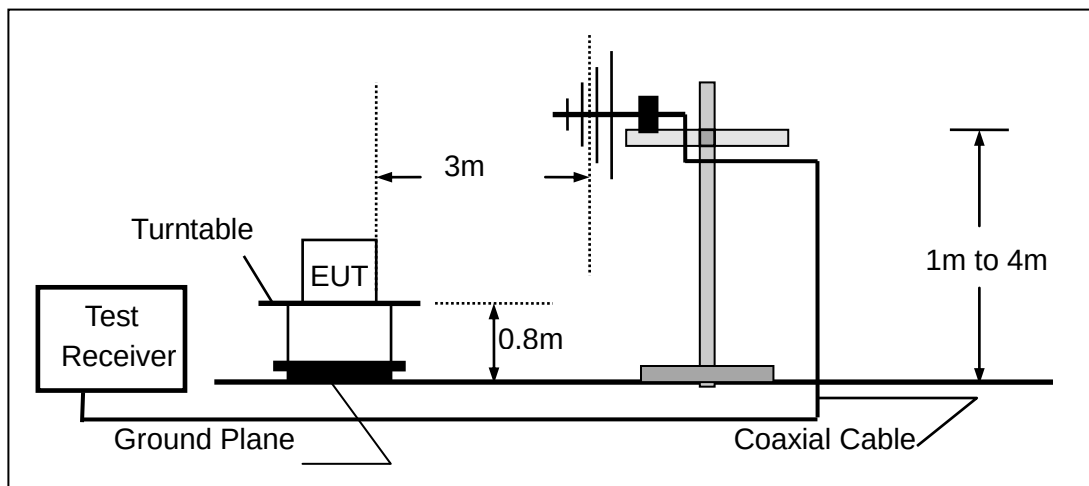
The Measuring equipment is listed in the section 6.3 of this test report.

3.2.4 TEST CONFIGURATION

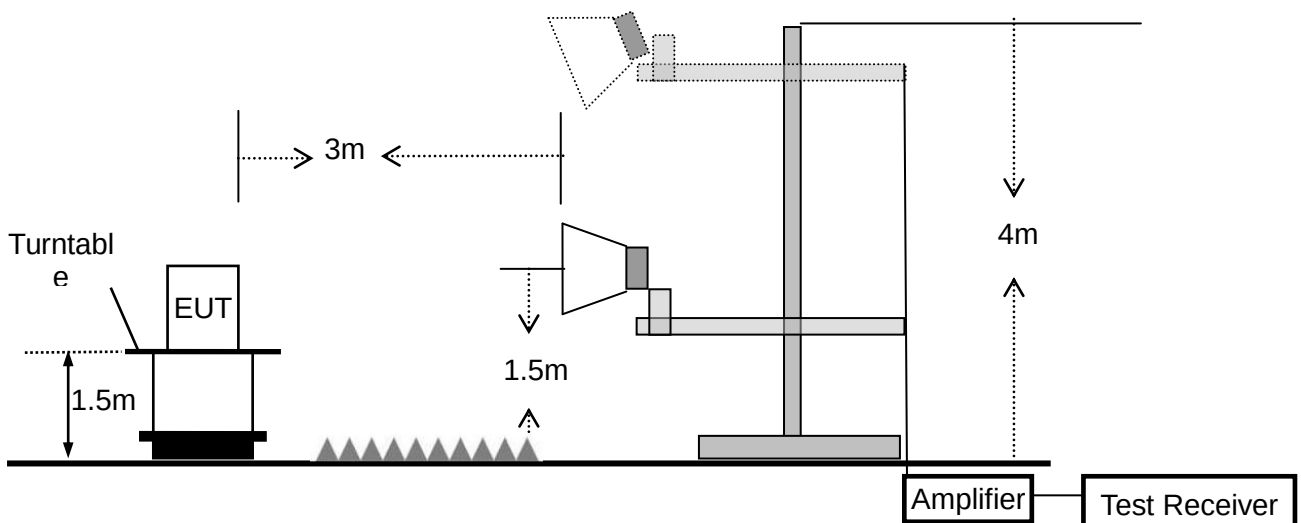
(a) For radiated emissions below 30MHz



(b) For radiated emissions from 30MHz to 1000MHz



(c) For radiated emissions above 1000MHz



3.2.5 TEST PROCEDURE

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT.

Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 1MHz for Average

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

- 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.
- The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; 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.
- 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.
- 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.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

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
	Average	1 MHz	1 MHz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW [kHz]})$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

3.2.6 TEST RESULTS (9KHz – 30 MHz)

EUT:	POS Terminal	Model Name. :	PT7010
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX	Polarization :	--

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

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

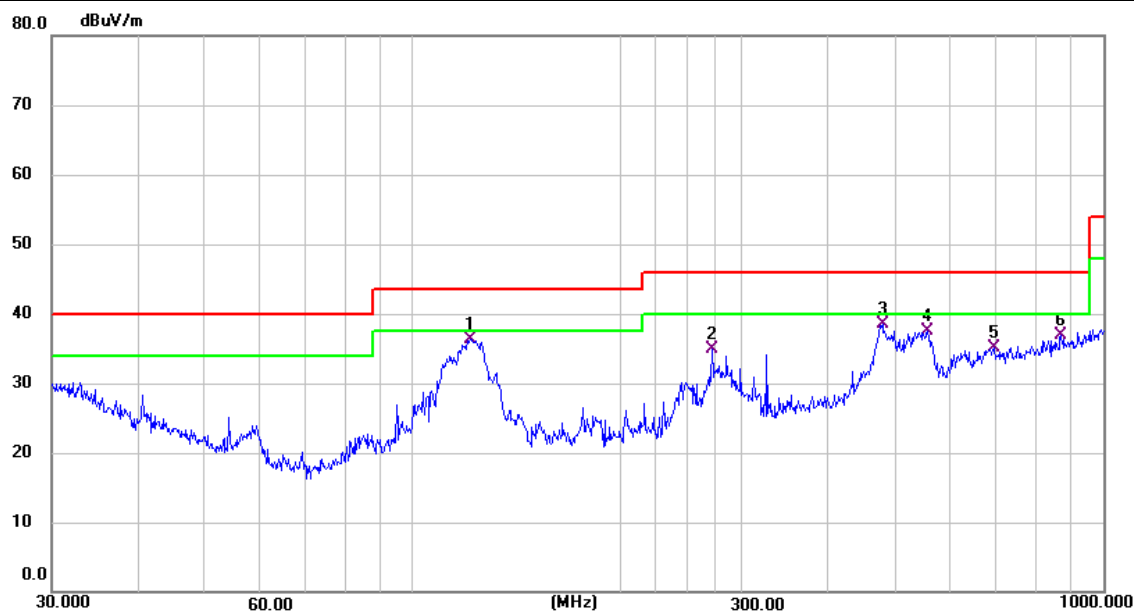
3.2.7 TEST RESULTS (30MHz – 1GHz)

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25°C	Relative Humidity :	55%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX(5.2G)- 802.11a (Mid CH)		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	121.1230	17.63	18.61	36.24	43.50	-7.26	QP
V	271.3245	15.13	19.70	34.83	46.00	-11.17	QP
V	478.8455	13.88	24.62	38.50	46.00	-7.50	QP
V	556.7743	11.78	25.79	37.57	46.00	-8.43	QP
V	694.4174	7.30	27.88	35.18	46.00	-10.82	QP
V	869.1300	6.57	30.40	36.97	46.00	-9.03	QP

Remark:

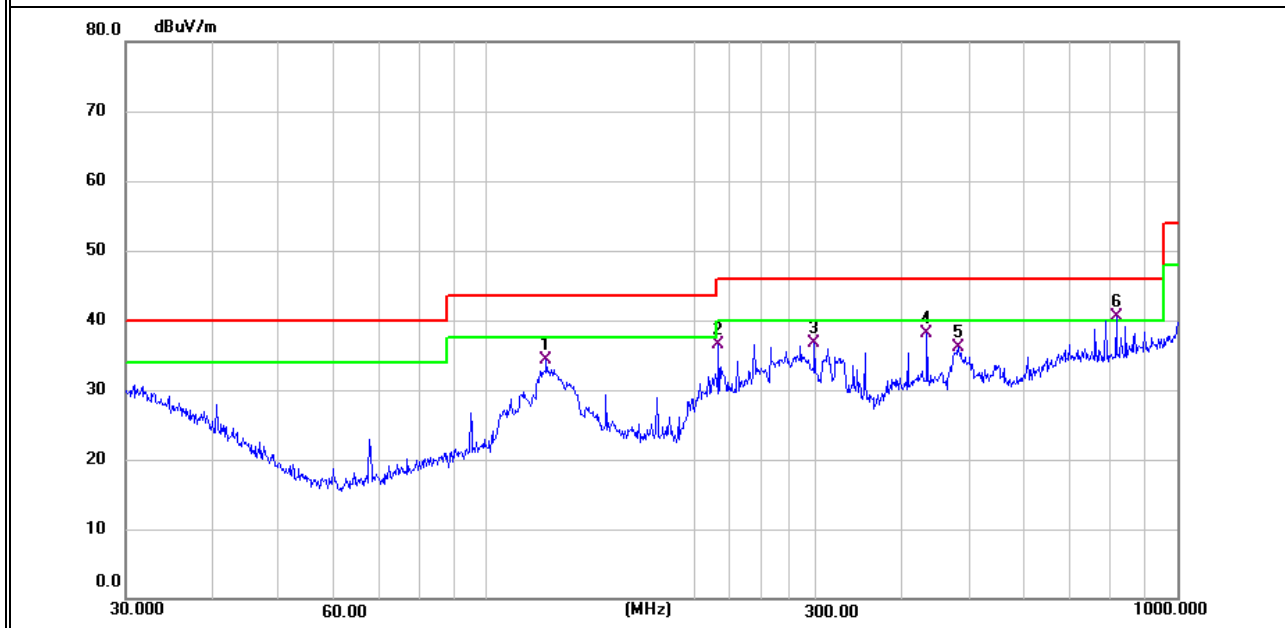
Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	121.9753	15.73	18.61	34.34	43.50	-9.16	QP
H	216.7828	19.81	16.72	36.53	46.00	-9.47	QP
H	298.2681	16.59	20.12	36.71	46.00	-9.29	QP
H	434.0650	14.13	23.90	38.03	46.00	-7.97	QP
H	482.2155	11.49	24.66	36.15	46.00	-9.85	QP
H	815.9678	10.80	29.72	40.52	46.00	-5.48	QP

Remark:

Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Note(1) "802.11a" mode is the worst mode.

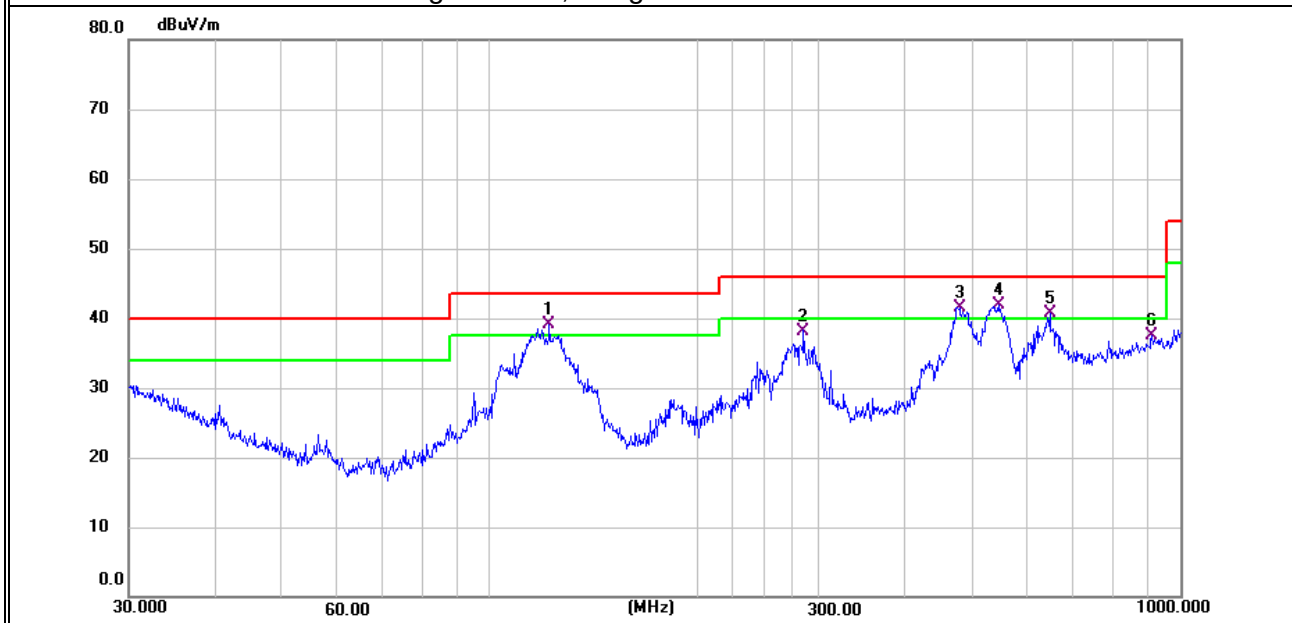
(2) Other emissions are attenuated more than 20dB below the permissible limits, so it does not recorded in the report.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25°C	Relative Humidity :	55%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX(5.3G)- 802.11a (Mid CH)		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	121.9754	20.50	18.61	39.11	43.50	-4.39	QP
V	284.9766	18.24	19.96	38.20	46.00	-7.80	QP
V	478.8455	16.96	24.62	41.58	46.00	-4.42	QP
V	545.1825	16.32	25.54	41.86	46.00	-4.14	QP
V	647.3855	13.50	27.15	40.65	46.00	-5.35	QP
V	909.6666	6.70	30.84	37.54	46.00	-8.46	QP

Remark:

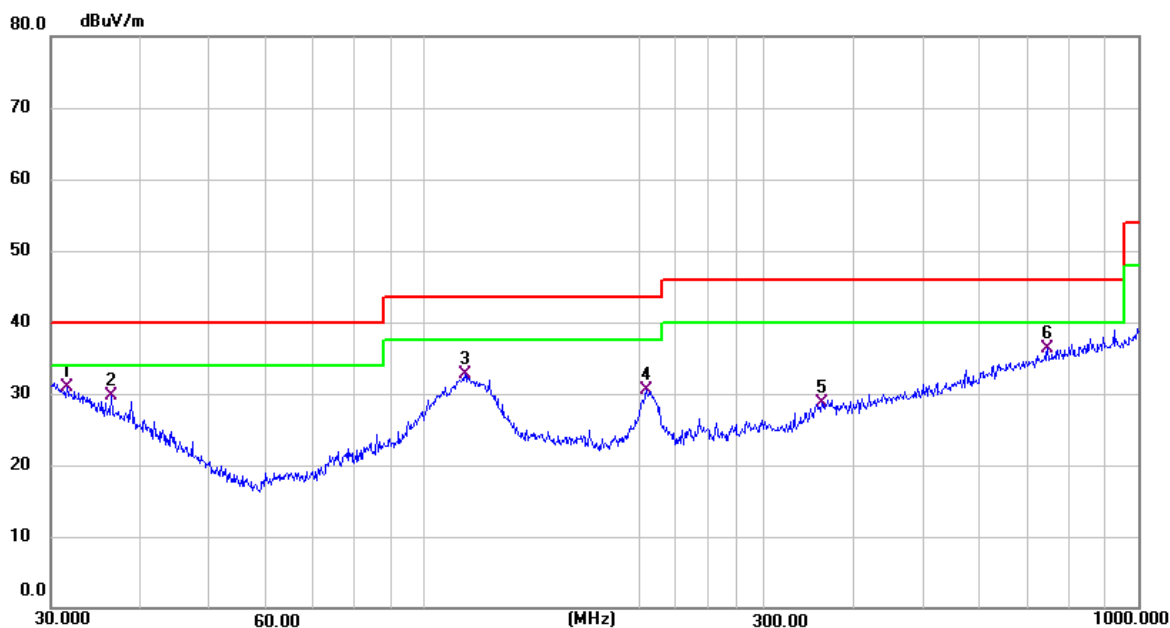
Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	31.6202	5.50	25.44	30.94	40.00	-9.06	QP
H	36.5092	7.00	22.76	29.76	40.00	-10.24	QP
H	114.1138	14.34	18.44	32.78	43.50	-10.72	QP
H	204.9551	14.11	16.32	30.43	43.50	-13.07	QP
H	360.4476	6.45	22.16	28.61	46.00	-17.39	QP
H	747.4825	7.46	28.77	36.23	46.00	-9.77	QP

Remark:

Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Note(1) "802.11a" mode is the worst mode.

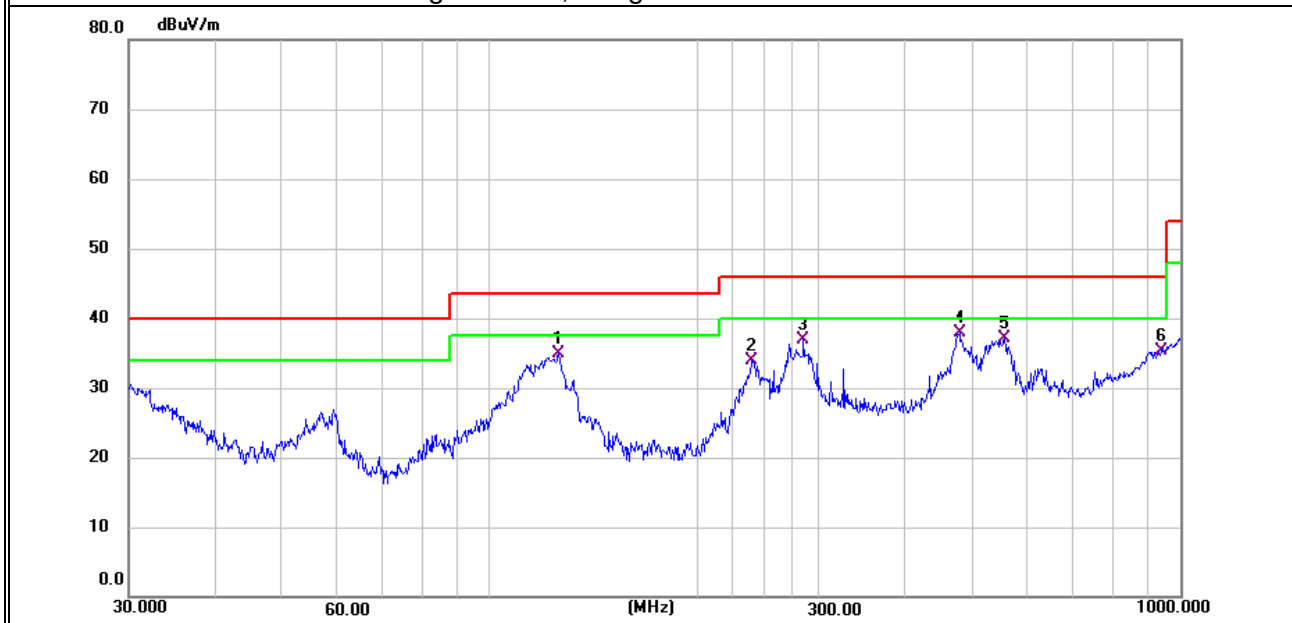
(2) Other emissions are attenuated more than 20dB below the permissible limits, so it does not recorded in the report.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25°C	Relative Humidity :	55%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX(5.6G)- 802.11a (Mid CH)		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	125.8863	16.23	18.64	34.87	43.50	-8.63	QP
V	239.9873	16.10	17.90	34.00	46.00	-12.00	QP
V	284.9766	17.03	19.96	36.99	46.00	-9.01	QP
V	478.8455	13.38	24.62	38.00	46.00	-8.00	QP
V	556.7743	11.28	25.79	37.07	46.00	-8.93	QP
V	938.8324	4.15	31.17	35.32	46.00	-10.68	QP

Remark:

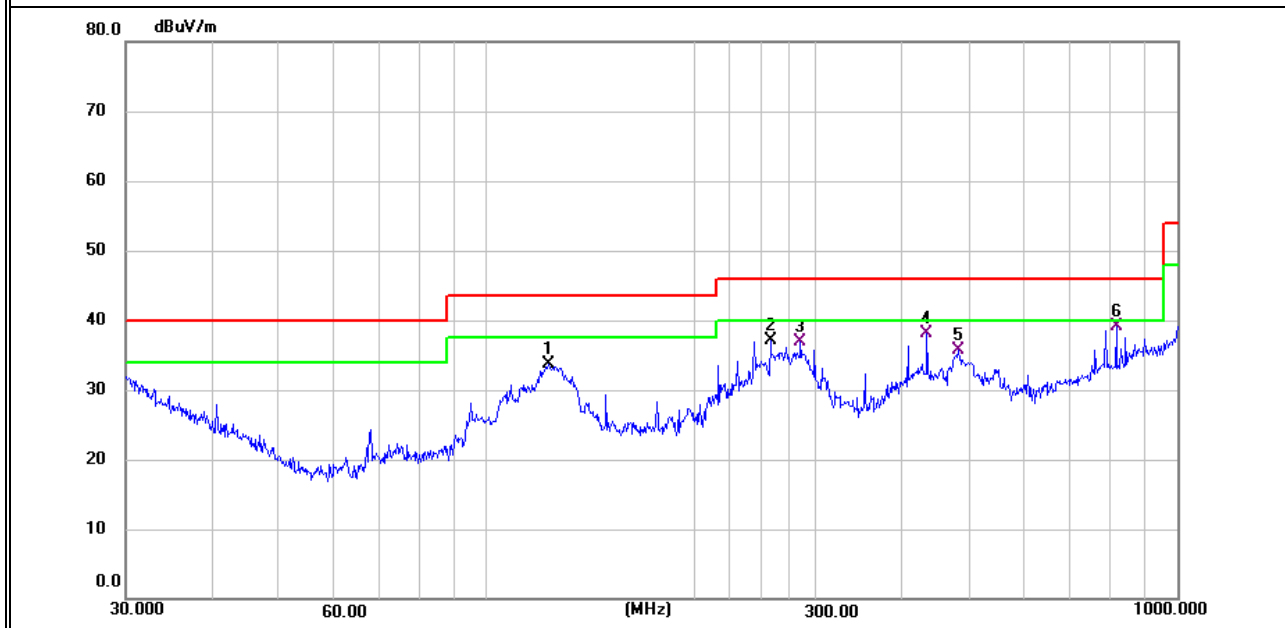
Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	122.8340	15.00	18.61	33.61	43.50	-9.89	QP
H	257.4221	17.98	19.21	37.19	46.00	-8.81	QP
H	284.9766	16.86	19.96	36.82	46.00	-9.18	QP
H	434.0650	14.13	23.90	38.03	46.00	-7.97	QP
H	482.2155	10.99	24.66	35.65	46.00	-10.35	QP
H	815.9678	9.30	29.72	39.02	46.00	-6.98	QP

Remark:

Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Note(1) "802.11a" mode is the worst mode.

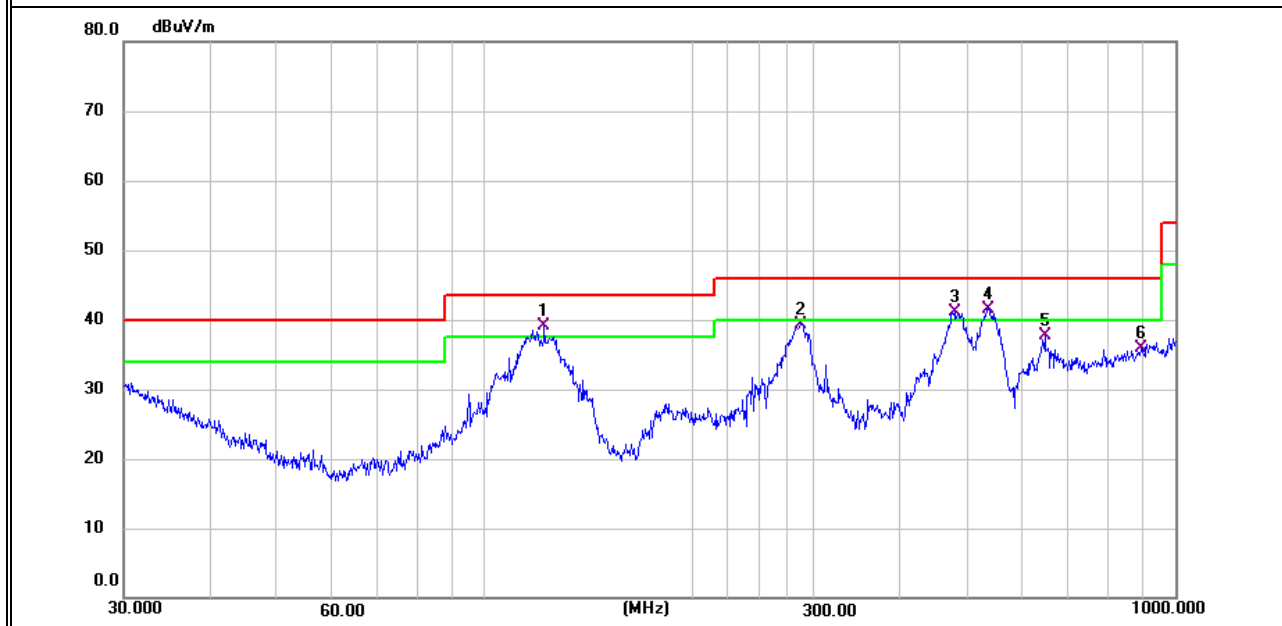
(2) Other emissions are attenuated more than 20dB below the permissible limits, so it does not recorded in the report.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25°C	Relative Humidity :	55%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX(5.8G)- 802.11a (Mid CH)		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	121.9753	20.50	18.61	39.11	43.50	-4.39	QP
V	286.9823	19.40	19.98	39.38	46.00	-6.62	QP
V	478.8455	16.46	24.62	41.08	46.00	-4.92	QP
V	535.7073	16.22	25.38	41.60	46.00	-4.40	QP
V	647.3854	10.50	27.15	37.65	46.00	-8.35	QP
V	890.7277	5.20	30.64	35.84	46.00	-10.16	QP

Remark:

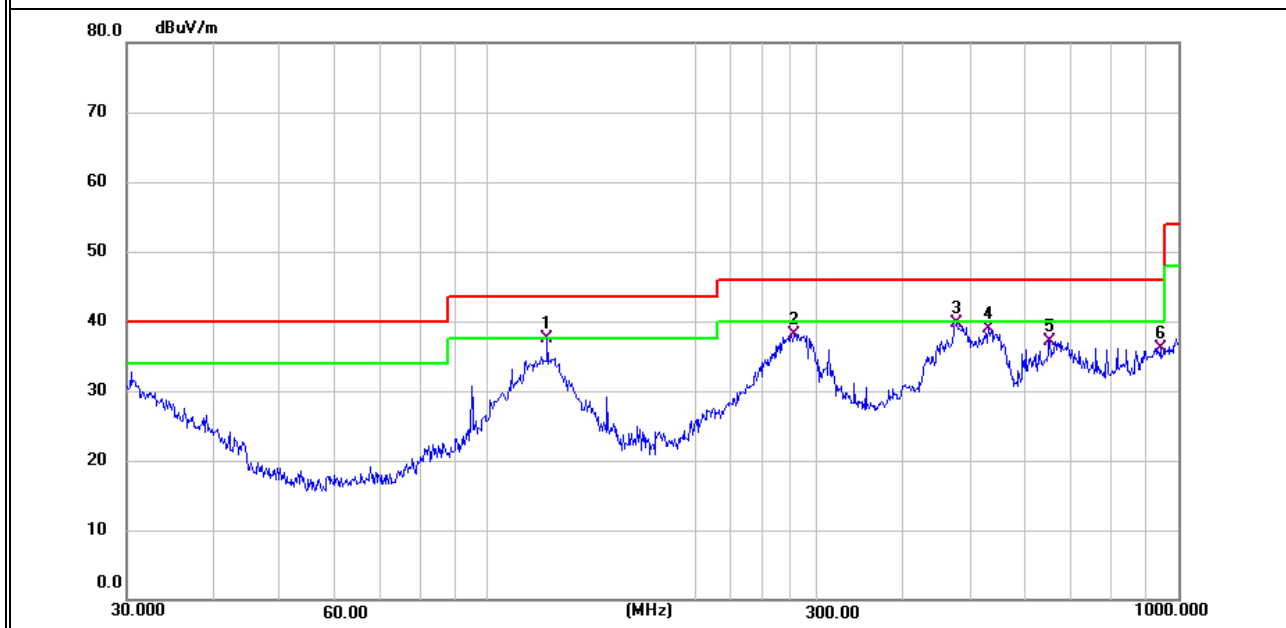
Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	121.9753	18.86	18.61	37.47	43.50	-6.03	QP
H	278.0668	18.24	19.85	38.09	46.00	-7.91	QP
H	477.1693	15.08	24.57	39.65	46.00	-6.35	QP
H	531.9633	13.47	25.34	38.81	46.00	-7.19	QP
H	651.9415	9.94	27.23	37.17	46.00	-8.83	QP
H	942.1304	4.98	31.20	36.18	46.00	-9.82	QP

Remark:

Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



Note(1)“802.11a” mode is the worst mode.

(2)Other emissions are attenuated more than 20dB below the permissible limits, so it does not recorded in the report.

3.2.8 TEST RESULTS (1GHz-18GHz)

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX(5.2G) - 802.11a_5180~5240MHz		

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)- 802.11a									
Vertical	3694.58	61.22	5.94	35.40	44.00	58.56	74.00	-15.44	Pk
Vertical	3694.50	42.28	5.94	35.40	44.00	39.62	54.00	-14.38	AV
Vertical	10360.65	56.80	8.46	39.75	44.50	60.51	68.20	-7.69	Pk
Vertical	15540.76	60.51	10.12	38.80	44.10	65.33	74.00	-8.67	Pk
Vertical	15540.79	38.94	10.12	38.80	42.70	45.16	54.00	-8.84	AV
Horizontal	3713.35	63.17	5.94	35.18	44.00	60.29	74.00	-13.71	Pk
Horizontal	3713.52	42.95	5.94	35.18	44.00	40.07	54.00	-13.93	AV
Horizontal	10360.98	58.42	8.46	38.71	44.50	61.09	68.20	-7.11	Pk
Horizontal	15540.91	56.75	10.12	38.38	44.10	61.15	74.00	-12.85	Pk
Horizontal	15540.65	39.97	10.12	38.38	44.10	44.37	54.00	-9.63	AV
middle Channel (5200 MHz)- 802.11a									
Vertical	3624.48	57.88	6.48	36.35	44.05	56.66	74.00	-17.34	Pk
Vertical	3624.42	41.69	6.48	36.35	44.05	40.47	54.00	-13.53	AV
Vertical	10400.34	59.09	8.47	37.88	44.51	60.93	68.20	-7.27	Pk
Vertical	15600.60	59.33	10.12	38.80	44.10	64.15	74.00	-9.85	Pk
Vertical	15600.62	39.12	10.12	38.80	42.70	45.34	54.00	-8.66	AV
Horizontal	4202.48	57.39	6.48	36.37	44.05	56.19	74.00	-17.81	Pk
Horizontal	4202.52	43.74	6.48	36.37	44.05	42.54	54.00	-11.46	AV
Horizontal	10400.48	61.26	8.47	38.64	44.50	63.87	68.20	-4.33	Pk
Horizontal	15600.82	59.53	10.12	38.38	44.10	63.93	74.00	-10.07	Pk
Horizontal	15600.82	39.82	10.12	38.38	44.10	44.22	54.00	-9.78	AV
High Channel (5240 MHz)- 802.11a									
Vertical	4598.08	61.89	7.10	37.24	43.50	62.73	74.00	-11.27	Pk
Vertical	4598.07	41.45	7.10	37.24	43.50	42.29	54.00	-11.71	AV
Vertical	10480.54	58.98	8.46	37.68	44.50	60.62	68.20	-7.58	Pk
Vertical	15720.68	60.50	10.12	38.80	44.10	65.32	74.00	-8.68	Pk
Vertical	15720.48	39.67	10.12	38.80	42.70	45.89	54.00	-8.11	AV
Horizontal	4589.76	60.30	7.10	37.24	43.50	61.14	74.00	-12.86	Pk
Horizontal	4589.78	40.06	7.10	37.24	43.50	40.90	54.00	-13.10	AV
Horizontal	10481.14	60.66	8.46	38.57	44.50	63.19	68.20	-5.01	Pk
Horizontal	15720.45	58.28	10.12	38.38	44.10	62.68	74.00	-11.32	Pk
Horizontal	15720.66	42.45	10.12	38.38	44.10	46.85	54.00	-7.15	AV

Note:"802.11a" mode is the worst mode.

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported. Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamplifier Factor = Level.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX(5.3G) - 802.11a_5260~5320MHz		

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5260 MHz)-Above 1G									
Vertical	4633.56	60.61	5.44	35.40	44.00	57.45	74.00	-16.55	Pk
Vertical	4633.56	41.75	5.74	35.40	44.00	38.89	54.00	-15.11	AV
Vertical	10520.40	57.96	8.26	39.75	44.50	61.47	68.20	-6.73	Pk
Vertical	15780.62	59.31	10.12	38.80	44.10	64.12	74.00	-9.88	Pk
Vertical	15780.62	37.81	9.62	38.80	42.70	43.53	54.00	-10.47	AV
Horizontal	4366.43	62.55	5.57	35.18	44.00	59.30	74.00	-14.70	Pk
Horizontal	4366.43	42.84	5.74	35.18	44.00	39.76	54.00	-14.24	AV
Horizontal	10520.54	58.18	8.38	38.71	44.50	60.77	68.20	-7.43	Pk
Horizontal	15780.62	56.02	9.88	38.38	44.10	60.18	74.00	-13.82	Pk
Horizontal	15780.62	39.27	9.94	38.38	44.10	43.48	54.00	-10.52	AV
middle Channel (5280 MHz)-Above 1G									
Vertical	4122.62	57.60	6.08	36.35	44.05	55.98	74.00	-18.02	Pk
Vertical	4122.62	40.92	6.39	36.35	44.05	39.61	54.00	-14.39	AV
Vertical	10560.47	57.00	8.28	37.88	44.51	58.66	68.20	-9.54	Pk
Vertical	15840.64	59.17	9.79	38.8	44.10	63.66	74.00	-10.34	Pk
Vertical	15840.64	38.26	9.70	38.8	42.70	44.06	54.00	-9.94	AV
Horizontal	3869.76	55.21	6.11	36.37	44.05	53.65	74.00	-20.35	Pk
Horizontal	3869.76	43.88	6.27	36.37	44.05	42.48	54.00	-11.52	AV
Horizontal	10561.02	60.79	8.33	38.64	44.50	63.26	68.20	-4.94	Pk
Horizontal	15840.65	58.76	9.99	38.38	44.10	63.03	74.00	-10.97	Pk
Horizontal	15840.65	39.17	9.81	38.38	44.10	43.26	54.00	-10.74	AV
High Channel (5320 MHz)-Above 1G									
Vertical	5366.80	60.76	6.96	37.24	43.50	61.46	74.00	-12.54	Pk
Vertical	5366.80	42.22	7.07	37.24	43.50	43.03	54.00	-10.97	AV
Vertical	10640.86	59.67	8.14	37.68	44.50	60.99	74.00	-13.01	Pk
Vertical	10640.86	39.04	8.35	37.68	44.50	40.57	54.00	-13.43	AV
Vertical	15960.69	58.87	10.11	38.8	44.10	63.68	74.00	-10.32	Pk
Vertical	15960.69	36.77	9.64	38.8	42.70	42.52	54.00	-11.48	AV
Horizontal	5436.87	59.50	7.05	37.24	43.50	60.29	74.00	-13.71	Pk
Horizontal	5436.87	39.90	7.05	37.24	43.50	40.69	54.00	-13.31	AV
Horizontal	10640.52	57.98	8.20	38.57	44.50	60.25	74.00	-13.75	Pk
Horizontal	10640.52	40.64	8.03	38.57	44.50	42.75	54.00	-11.25	AV

Note:"802.11a" mode is the worst mode.

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value

has no need to be reported. Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX(5.6G) - 802.11a_5500~5700MHz		

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5510 MHz)-Above 1G									
Vertical	5433.30	61.42	5.61	35.40	44.00	58.43	74.00	-15.57	Pk
Vertical	5433.30	42.59	5.61	35.40	44.00	39.60	54.00	-14.40	AV
Vertical	11020.32	56.48	8.24	39.75	44.50	59.97	74.00	-14.03	Pk
Vertical	11020.32	39.36	8.35	39.75	44.50	42.97	54.00	-11.03	AV
Vertical	16530.12	47.45	10.05	38.80	44.10	52.20	68.20	-16.00	Pk
Horizontal	5126.75	56.68	5.78	35.18	44.00	53.64	74.00	-20.36	Pk
Horizontal	5126.75	39.20	5.66	35.18	44.00	36.05	54.00	-17.95	AV
Horizontal	11020.32	55.49	8.22	38.71	44.50	57.93	74.00	-16.07	Pk
Horizontal	11020.32	38.51	8.14	38.71	44.50	40.86	54.00	-13.14	AV
Horizontal	16530.12	59.03	10.04	38.38	44.10	63.34	68.20	-4.86	Pk
middle Channel (5590 MHz)-Above 1G									
Vertical	5647.61	59.09	6.79	37.24	43.50	59.61	68.20	-8.59	Pk
Vertical	11200.71	57.07	8.10	37.68	44.50	58.35	74.00	-15.65	Pk
Vertical	11200.71	39.42	8.23	37.68	44.50	40.83	54.00	-13.17	AV
Vertical	16770.00	58.79	9.70	38.80	44.10	63.19	68.20	-5.01	Pk
Horizontal	5433.54	58.63	6.74	37.24	43.50	59.11	74.00	-14.89	Pk
Horizontal	5433.54	40.06	6.74	37.24	43.50	40.54	54.00	-13.46	AV
Horizontal	11200.71	58.01	8.25	38.57	44.50	60.33	74.00	-13.67	Pk
Horizontal	11200.71	40.05	8.25	38.57	44.50	42.37	54.00	-11.63	AV
Horizontal	16770.00	58.97	10.09	38.38	44.10	63.33	68.20	-4.87	Pk
High Channel (5670 MHz)-Above 1G									
Vertical	5647.61	57.85	6.79	37.24	43.50	58.38	68.20	-9.82	Pk
Vertical	11340.54	57.90	8.10	37.68	44.50	59.18	74.00	-14.82	Pk
Vertical	11340.54	38.29	8.23	37.68	44.50	39.70	54.00	-14.30	AV
Vertical	17010.36	59.40	9.70	38.80	44.10	63.80	68.20	-4.40	Pk
Horizontal	5433.54	57.13	6.74	37.24	43.50	57.61	74.00	-16.39	Pk
Horizontal	5433.54	40.22	6.74	37.24	43.50	40.70	54.00	-13.30	AV
Horizontal	11340.54	57.72	8.25	38.57	44.50	60.05	74.00	-13.95	Pk
Horizontal	11340.54	39.78	8.25	38.57	44.50	42.10	54.00	-11.90	AV
Horizontal	17010.36	59.19	10.09	38.38	44.10	63.55	68.20	-4.65	Pk

Note:"802.11a" mode is the worst mode.

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported. Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX (5.8G) -- 802.11a_5745~5825MHz		

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G									
Vertical	2806.9	63.00	5.94	35.40	44.00	60.34	74.00	-13.66	Pk
Vertical	2806.9	44.48	5.94	35.40	44.00	41.82	54.00	-12.18	AV
Vertical	11490	62.46	8.46	39.75	44.50	66.17	74.00	-7.83	Pk
Vertical	11490	43.46	8.46	39.75	44.50	47.17	54.00	-6.83	AV
Vertical	17235	58.88	10.12	38.80	44.10	63.70	68.20	-4.50	Pk
Horizontal	2911.524	64.60	5.94	35.18	44.00	61.72	68.20	-6.48	Pk
Horizontal	11490	61.53	8.46	38.71	44.50	64.20	74.00	-9.80	Pk
Horizontal	11490	39.04	8.46	38.71	44.50	41.71	54.00	-12.29	AV
Horizontal	17235	57.28	10.12	38.38	44.10	61.68	68.20	-6.52	Pk
middle Channel (5785 MHz)-Above 1G									
Vertical	3763.083	63.07	6.48	36.35	44.05	61.85	74.00	-12.15	Pk
Vertical	3763.083	42.00	6.48	36.35	44.05	40.78	54.00	-13.22	AV
Vertical	11570	61.73	8.47	37.88	44.51	63.57	74.00	-10.43	Pk
Vertical	11570	43.89	8.47	37.88	44.51	45.73	54.00	-8.27	AV
Vertical	17355	58.47	10.12	38.8	44.10	63.29	68.20	-4.91	Pk
Horizontal	3561.585	60.69	6.48	36.37	44.05	59.49	68.20	-8.71	Pk
Horizontal	11570	60.35	8.47	38.64	44.50	62.96	74.00	-11.04	Pk
Horizontal	11570	43.13	8.47	38.64	44.50	45.74	54.00	-8.26	AV
Horizontal	17355	62.52	10.12	38.38	44.10	66.92	74.00	-7.08	Pk
Horizontal	17355	41.82	10.12	38.38	44.10	46.22	54.00	-7.78	AV
High Channel (5825 MHz)-Above 1G									
Vertical	3907.168	59.08	7.10	37.24	43.50	59.92	74.00	-14.08	Pk
Vertical	3907.168	41.30	7.10	37.24	43.50	42.14	54.00	-11.86	AV
Vertical	11650	59.86	8.46	37.68	44.50	61.50	74.00	-12.50	Pk
Vertical	11650	42.40	8.46	37.68	44.50	44.04	54.00	-9.96	AV
Vertical	17475	59.16	10.12	38.8	44.10	63.98	68.20	-4.22	Pk
Horizontal	3912.779	60.68	7.10	37.24	43.50	61.52	74.00	-12.48	Pk
Horizontal	3912.779	41.65	7.10	37.24	43.50	42.49	54.00	-11.51	AV
Horizontal	11650	62.70	8.46	38.57	44.50	65.23	74.00	-8.77	Pk
Horizontal	11650	41.12	8.46	38.57	44.50	43.65	54.00	-10.35	AV
Horizontal	17475	59.59	10.12	38.38	44.10	63.99	68.20	-4.21	Pk

Note:"802.11a" mode is the worst mode.

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

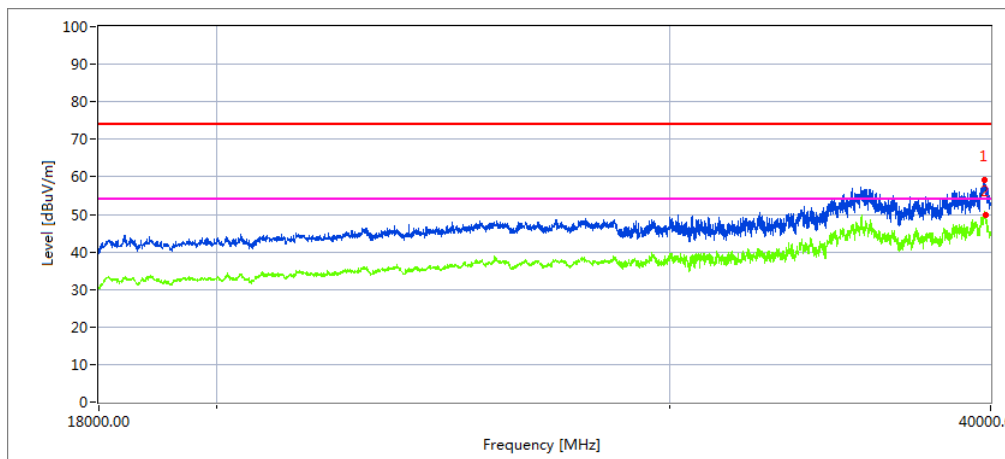
3.2.9 TEST RESULTS (18GHz-40GHz)

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX (5.2G)-802.11n20 ;TX (5.3G)-802.11ac20 TX (5.6G)-802.11ax40;TX (5.8G)-802.11ax20		

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

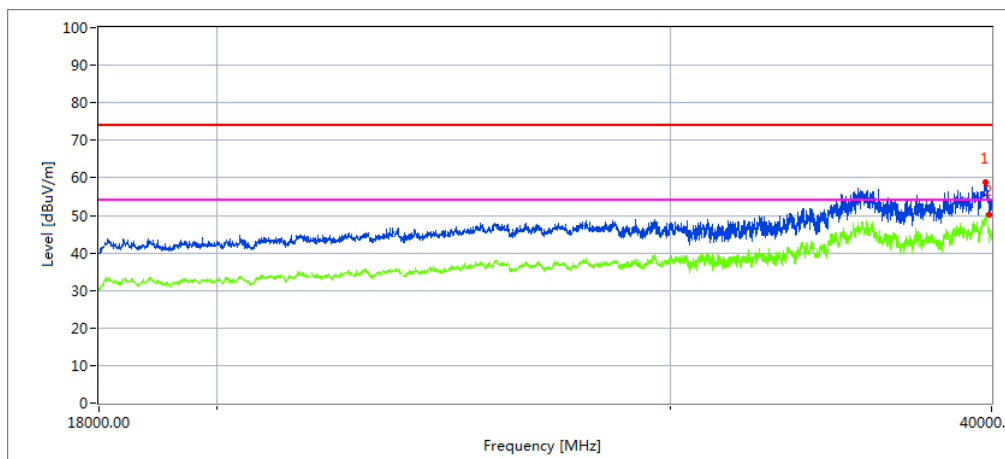
Low Channel (5180 MHz)-Above 1G

Horizontal



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39782.778	32.90	20.09	44.07	43.48	53.58	68.20	-14.62	AVG

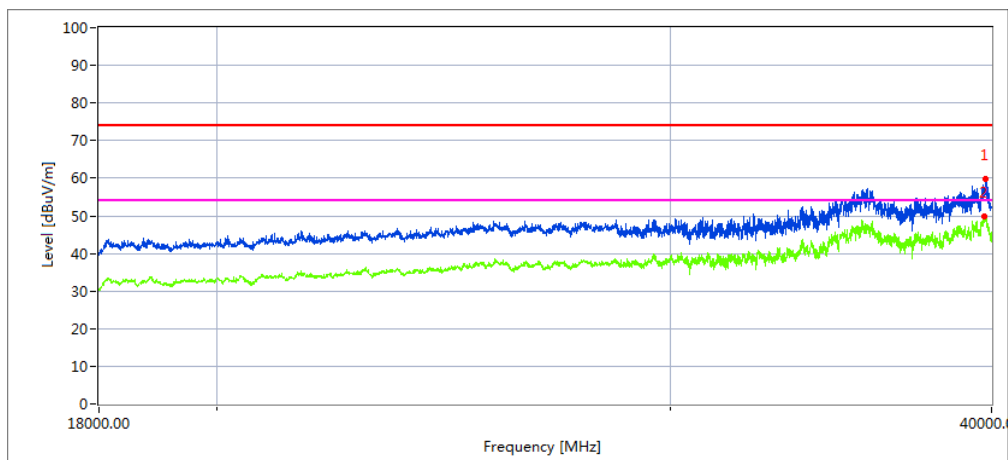
Vertical



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39798.591	36.06	19.11	42.73	44.61	53.29	68.20	-14.91	AVG

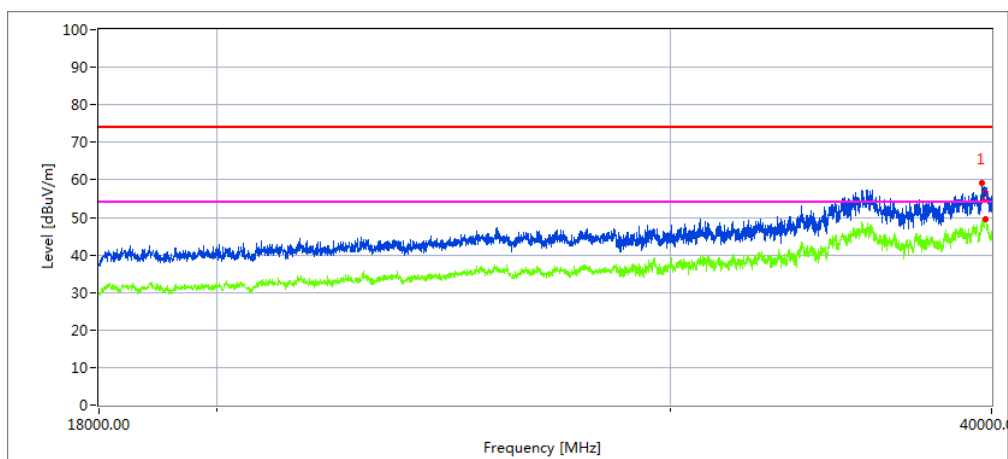
High Channel (5240 MHz)-Above 1G

Horizontal



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39799.442	33.41	20.09	44.07	43.48	54.09	68.20	-14.11	AVG

Vertical

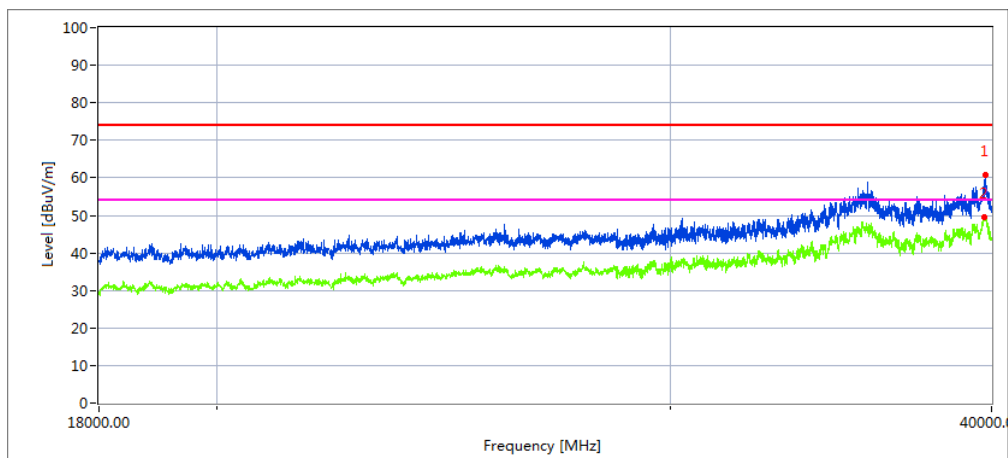


Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39672.258	31.91	20.09	44.07	43.48	52.59	68.20	-15.61	AVG

Note: 802.11a mode is the worst mode.

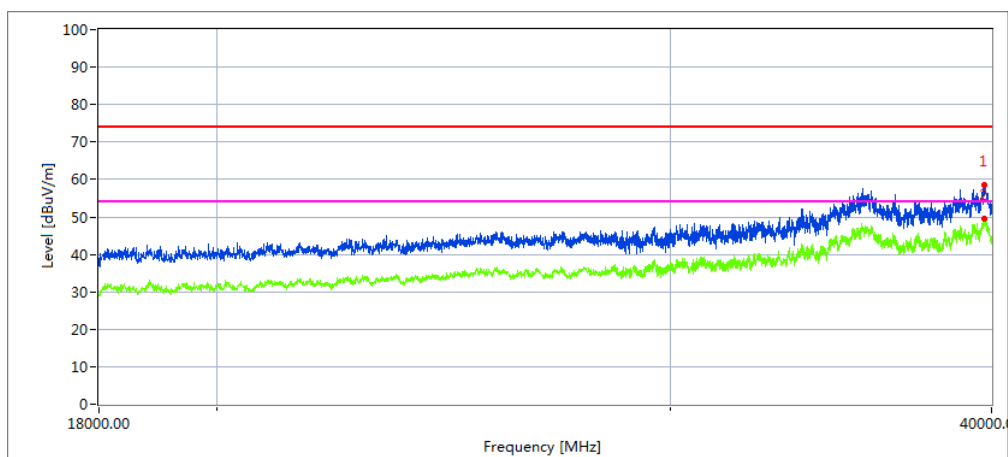
Low Channel (5260 MHz)-Above 1G

Horizontal



Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
39771.332	36.68	20.09	44.07	43.48	55.9	68.2	-12.3	AVG

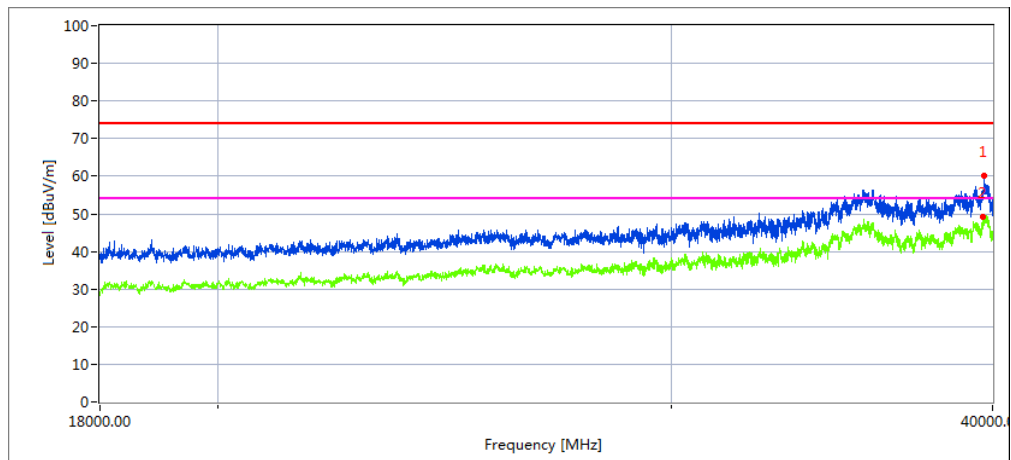
Vertical



Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
39736.872	36.98	20.06	44.07	43.21	58.4	68.2	-9.8	-3.3

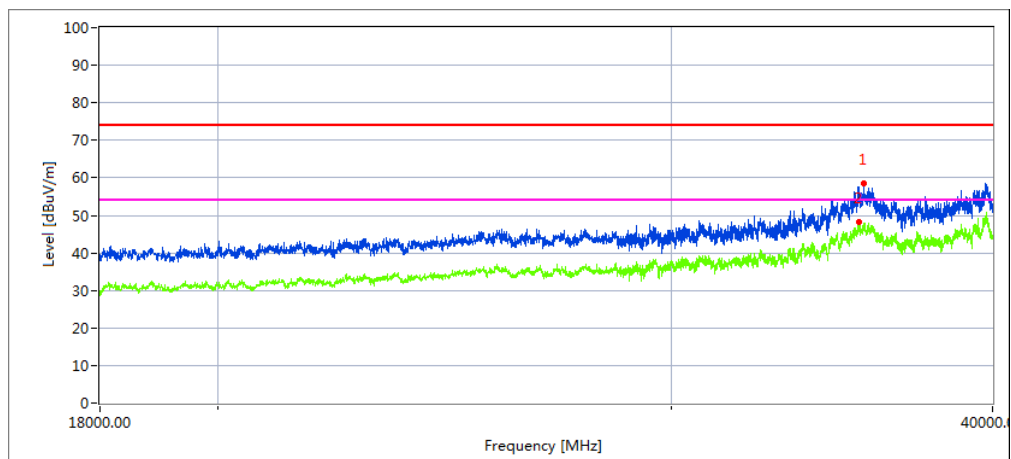
High Channel (5320 MHz)-Above 1G

Horizontal



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39701.268	37.97	20.1	44.1	43.22	60.1	68.2	-8.1	AVG

Vertical

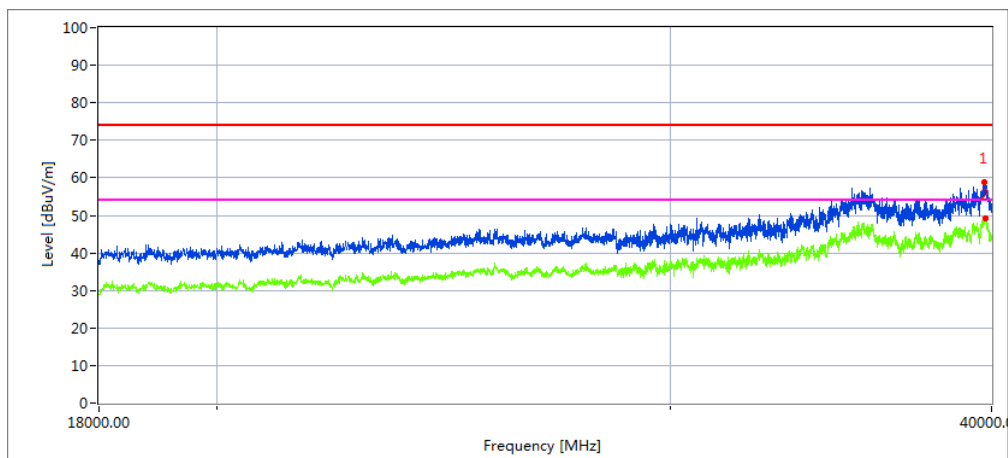


Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
35651.004	28.85	20.1	44.1	43.22	58.6	68.2	-9.6	AVG

Note: 802.11a mode is the worst mode.

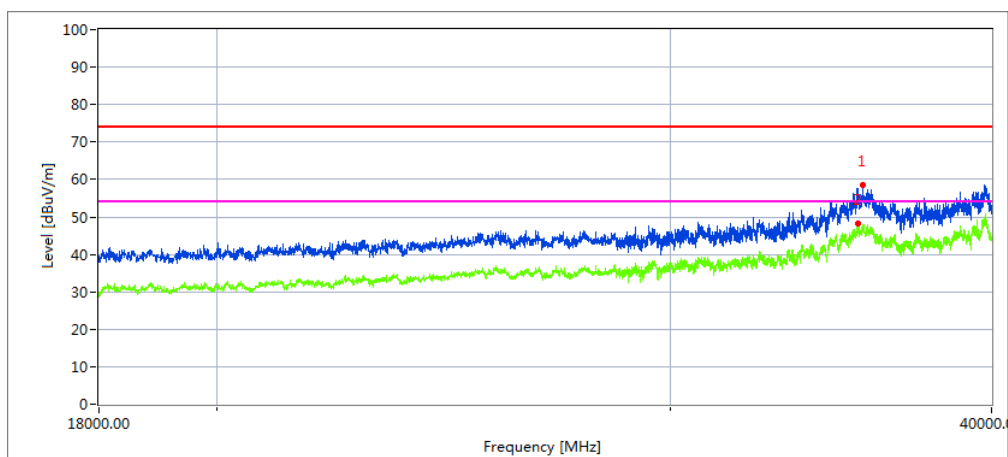
Low Channel (5500 MHz)-Above 1G

Horizontal



Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
39759.474	28.85	20.1	44.1	43.22	56.8	68.2	-11.4	AVG

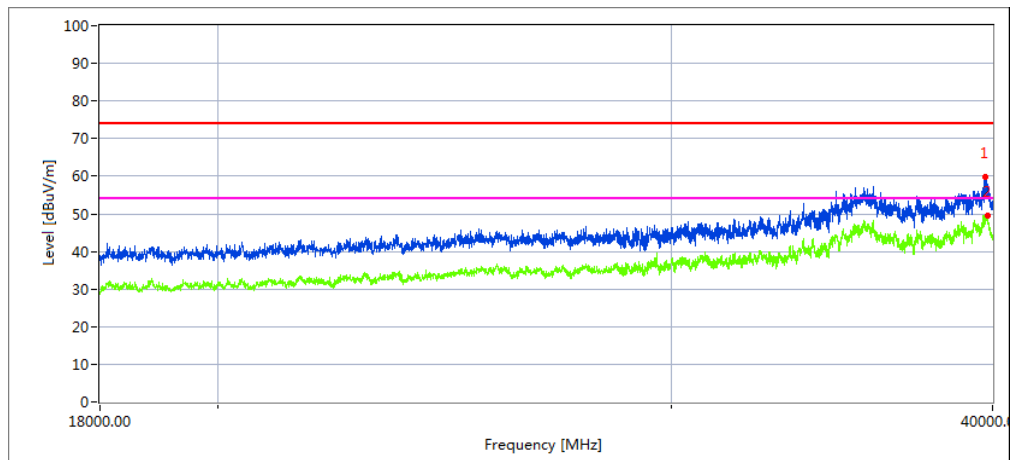
Vertical



Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
35480.504	37.97	20.1	44.1	43.22	55.1	68.2	-13.1	AVG

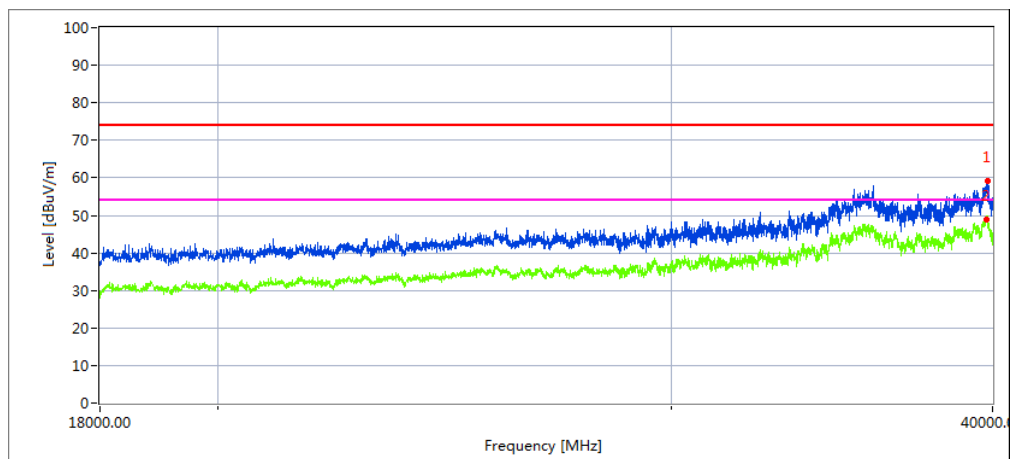
High Channel (5700 MHz)-Above 1G

Horizontal



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39817.454	35.58	20.09	44.07	43.48	57.7	68.2	-10.5	AVG

Vertical

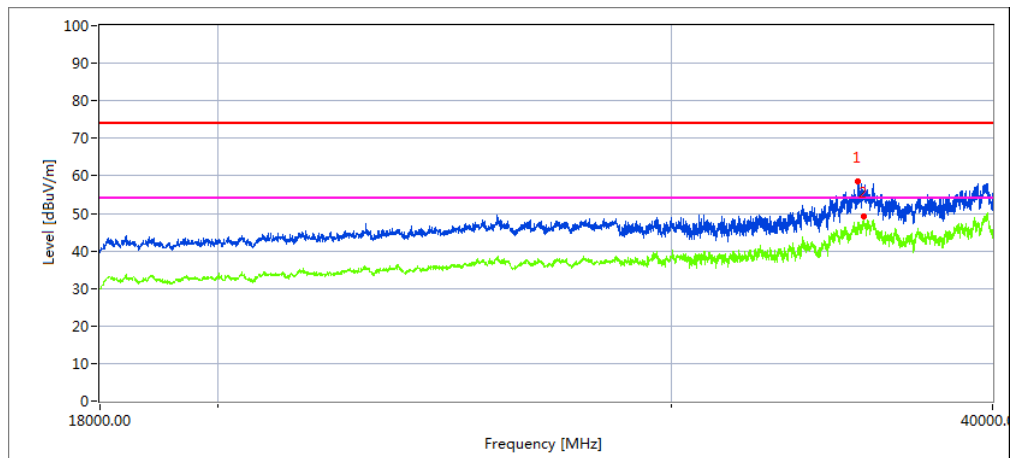


Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39815.224	36.68	20.09	44.07	43.48	59.1	68.2	-9.1	AVG

Note:802.11a mode is the worst mode.

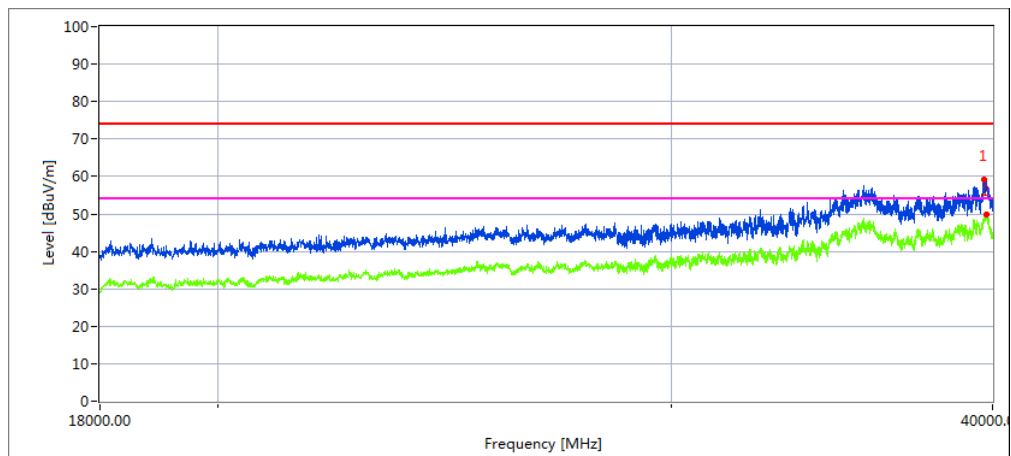
Low Channel (5745 MHz)-Above 1G

Horizontal



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
35459.427	30.28	20.09	44.16	43.48	51.05	68.20	17.15	AVG

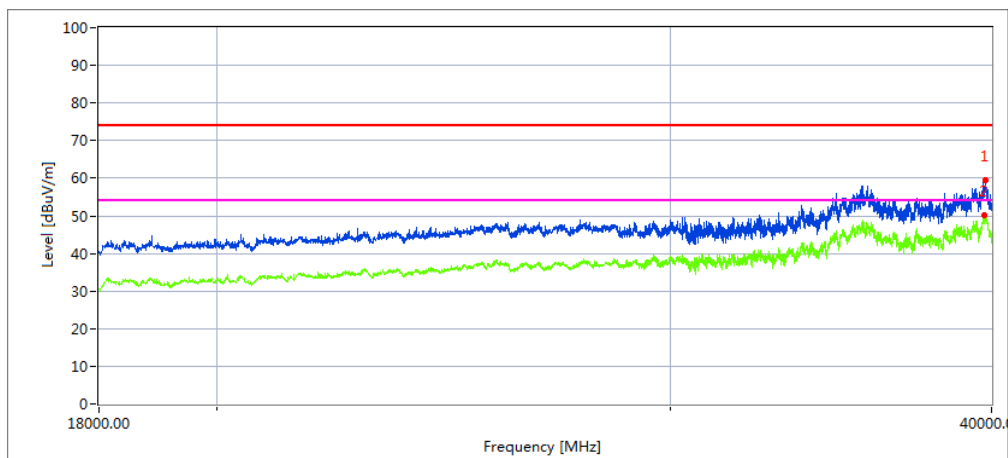
Vertical



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39716.170	33.18	20.06	44.07	43.21	54.10	68.20	14.10	AVG

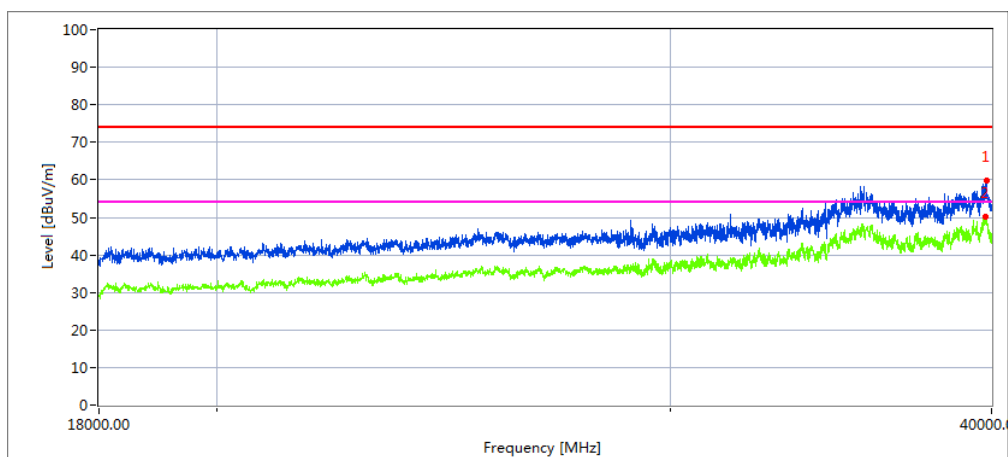
High Channel (5825 MHz)-Above 1G

Horizontal



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39765.106	35.71	19.11	42.63	43.48	53.97	68.20	14.23	AVG

Vertical



Frequency	Meter Reading	Cable loss	Antenna Factor	Preamplifier	Emission Level	Limits	Margin	Remark
(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
39815.245	33.42	20.10	44.10	43.22	54.40	68.20	13.80	AVG

Note: 802.11a mode is the worst mode.

3.2.10 Spurious Emission in Restricted Band 4.5GHz~5.150 GHz& 5.350GHz~5460GHz

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX (5.2G)-802.11a		

All the modulation modes have been tested, The report just record the worst data mode.

Frequen cy	Meter Reading	Cable Loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detec tor	Comment
(MHz)	(dBμV)	(dB)	dB/m	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
5.2G WIFI-802.11n20 Mode									
4500	72.55	5.2	35.6	44.2	69.50	74	-4.5	Pk	Horizontal
4500	71.70	5.2	35.6	44.2	69.50	54	15.50	AV	Horizontal
4500	71.75	5.2	35.6	44.2	69.50	74	-4.50	Pk	Horizontal
4500	71.52	5.2	35.6	44.2	69.50	54	15.50	AV	Horizontal
5150	62.67	5.36	35.66	44.22	60.32	74	-13.68	Pk	Vertical
5150	42.87	5.36	35.66	44.22	40.56	54	-13.44	AV	Vertical
5150	63.03	5.36	35.66	44.22	61.20	74	-12.80	Pk	Horizontal
5150	43.70	5.36	35.66	44.22	41.53	54	-12.47	AV	Horizontal
5350	51.62	5.68	35.68	44.22	49.80	74	-24.20	Pk	Vertical
5350	31.63	5.68	35.68	44.22	29.63	54	-24.37	AV	Vertical
5350	52.08	5.68	35.68	44.22	49.60	74	-24.40	Pk	Horizontal
5350	33.53	5.68	35.68	44.22	30.95	54	-23.05	AV	Horizontal

Note: (1) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor

(2) "802.11a" mode is the worst mode. When PK value is lower than the Average value limit, average don't record.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX (5.3G)-802.11a		

All the modulation modes have been tested, The report just record the worst data mode.

Frequen cy	Meter Reading	Cable Loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detec tor	Comment
(MHz)	(dBμV)	(dB)	dB/m	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
High Channel (5320 MHz)-Above 1G									
5350.00	69.57	6.96	37.24	43.50	71.76	74.00	-2.24	Pk	Vertical
5350.00	51.19	7.07	37.24	43.50	53.33	54.00	-0.67	AV	Vertical
5350.00	68.51	7.05	37.24	43.50	70.15	74.00	-3.85	Pk	Horizontal
5350.00	49.97	7.05	37.24	43.50	51.59	54.00	-2.41	AV	Horizontal

Note: (1) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor

(2) "802.11a" mode is the worst mode. When PK value is lower than the Average value limit, average don't record.

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX (5.6G)-802.11a		

All the modulation modes have been tested, The report just record the worst data mode.

Frequency	Meter Reading	Cable Loss	Antenna Factor	Preamplifier Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	dB/m	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
Low Channel (5500 MHz)-Above 1G									
5460.00	48.03	5.61	35.40	44.00	45.80	74.00	-28.20	Pk	Vertical
5460.00	34.13	5.76	35.40	44.00	32.17	54.00	-21.83	AV	Vertical
5460.00	47.04	5.78	35.18	44.00	45.10	74.00	-28.90	Pk	Horizontal
5460.00	34.93	5.66	35.18	44.00	32.25	54.00	-21.75	AV	Horizontal

Note: (1) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor

(2) "802.11a" mode is the worst mode. When PK value is lower than the Average value limit, average don't record.

3.3 POWER SPECTRAL DENSITY TEST

3.3.1 Applied procedures / limit

According to FCC §15.407(a)(3)

For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

,

3.3.2 TEST PROCEDURE

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

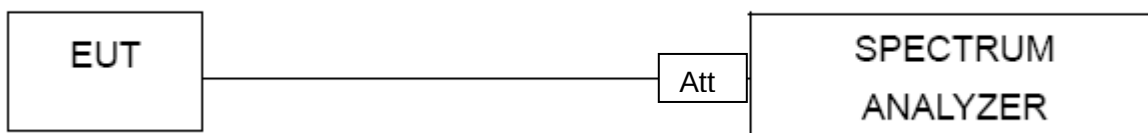
- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ KHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ KHz}$ is available on nearly all spectrum analyzers.

3.3.3 DEVIATION FROM STANDARD

No deviation.

3.3.4 TEST SETUP



3.3.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

3.3.6 TEST RESULTS

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Frequency Band 1 (5180-5240MHz), Band 2A (5260-5320MHz), Band 2C (5500-5700MHz), Band 3 (5745-5825MHz)		

Test data reference attachment.

3.4 26DB & 99% EMISSION BANDWIDTH

3.4.1 Applied procedures / limit

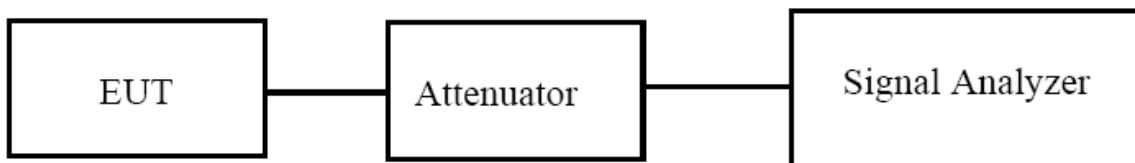
The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

3.4.2 TEST PROCEDURE

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

The following procedure shall be used for measuring (99 %) power bandwidth:

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.
- Set RBW = 1 % to 5 % of the OBW
- Set VBW $\geq 3 \cdot$ RBW
- Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- Use the 99 % power bandwidth function of the instrument (if available).
- If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.



3.4.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.4.4 TEST RESULTS

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Frequency Band 1 (5180-5240MHz), Band 2A (5260-5320MHz), Band 2C (5500-5700MHz), Band 3 (5745-5825MHz)		

Test data reference attachment.

3.5 MINIMUM 6 DB BANDWIDTH

3.5.1 Applied procedures / limit

According to FCC §15.407(e)

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

3.5.2 TEST PROCEDURE

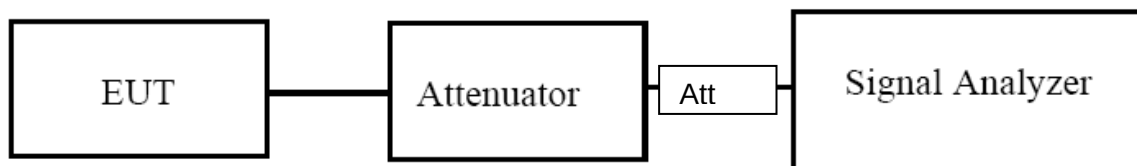
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.5.3 DEVIATION FROM STANDARD

No deviation.

3.5.4 TEST SETUP



3.5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.5.6 TEST RESULTS

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX (5G) Mode Frequency Band 3 (5745-5825MHz)		

Test data reference attachment.

3.6 MAXIMUM CONDUCTED OUTPUT POWER

3.6.1 PPLIED PROCEDURES / LIMIT

According to FCC §15.407

The maximum conducted output power should not exceed:

Frequency Band(MHz)	Limit
5150~5250	250mW
5250~5350	250 mW or 11 dBm + 10 log B Note: The limit is the smaller of the two, "B" represents -26dB bandwidth.
5470~5725	250 mW or 11 dBm + 10 log B Note: The limit is the smaller of the two, "B" represents -26dB bandwidth.
5725~5850	1W

3.6.2 TEST PROCEDURE

- Maximum conducted output power may be measured using a spectrum analyzer/EMI receiver or an RF power meter.

1. Device Configuration

If possible, configure or modify the operation of the EUT so that it transmits continuously at its maximum power control level (see section II.B.).

a) The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (to no lower than 98 percent) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.

b) If continuous transmission (or at least 98 percent duty cycle) cannot be achieved due to hardware limitations (e.g., overheating), the EUT shall be operated at its maximum power control level with the transmit duration as long as possible and the duty cycle as high as possible.

2. Measurement using a Spectrum Analyzer or EMI Receiver (SA)

Measurement of maximum conducted output power using a spectrum analyzer requires integrating the spectrum across a frequency span that encompasses, at a minimum, either the EBW or the 99-percent occupied bandwidth of the signal.¹ However, the EBW must be used to determine bandwidth dependent limits on maximum conducted output power in accordance with § 15.407(a).

a) The test method shall be selected as follows: (i) Method SA-1 or SA-1 Alternative (averaging with the EUT transmitting at full power throughout each sweep) shall be applied if either of the following conditions can be satisfied:

- The EUT transmits continuously (or with a duty cycle ≥ 98 percent).
- Sweep triggering or gating can be implemented in a way that the device transmits at the maximum power control level throughout the duration of each of the instrument sweeps to be averaged. This condition can generally be achieved by triggering the instrument's sweep if the duration of the sweep (with the analyzer configured as in Method SA-1, below) is equal to or shorter than the duration T of each transmission from the EUT and if those transmissions exhibit full power throughout their durations.

(ii) Method SA-2 or SA-2 Alternative (averaging across on and off times of the EUT transmissions, followed by duty cycle correction) shall be applied if the conditions of (i) cannot be achieved and the transmissions exhibit a constant duty cycle during the measurement duration. Duty cycle will be considered to be constant if variations are less than ± 2 percent.

(iii) Method SA-3 (RMS detection with max hold) or SA-3 Alternative (reduced VBW with max hold) shall be applied if the conditions of (i) and (ii) cannot be achieved.

b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep): (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW ≥ 3 MHz.

(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is $\leq$ RBW/2, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".

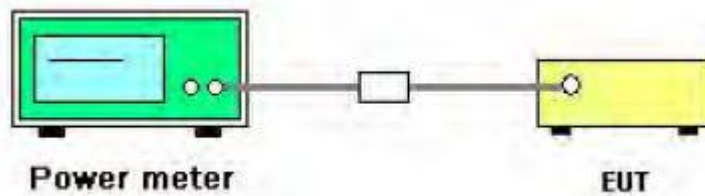
(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum

3.6.3 DEVIATION FROM STANDARD

No deviation.

3.6.4 TEST SETUP



3.6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.6.6 TEST RESULTS

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Frequency Band 1 (5180-5240MHz), Band 2A (5260-5320MHz), Band 2C (5500-5700MHz), Band 3 (5745-5825MHz)		

Test data reference attachment.

3.7 OUT OF BAND EMISSIONS

3.7.1 Applicable Standard

According to FCC §15.407(b)

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
 - (ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

3.7.2 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot

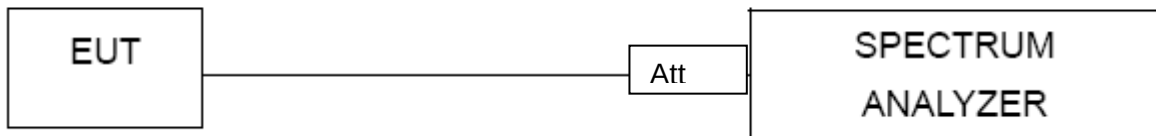
the graph with marking the highest point and edge frequency.

5. Repeat above procedures until all measured frequencies were complete.

3.7.3 DEVIATION FROM STANDARD

No deviation.

3.7.4 TEST SETUP



3.7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.7.6 TEST RESULTS

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V

Test data reference attachment.

3.8 SPURIOUS RF CONDUCTED EMISSIONS

3.8.1 Conformance Limit

According to FCC §15.407(b)(1) (2) (3) (4)

3.8.2 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

3.8.3 Test Setup

Please refer to Section 6.1 of this test report.

3.8.4 Test Procedure

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=1MHz and VBW= 3MHz to measure the peak field strength , and measure frequency range from 30MHz to 40GHz.

3.8.5 Test Results

Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and band edge measurement data.

Test data reference attachment.

3.9 FREQUENCY STABILITY MEASUREMENT

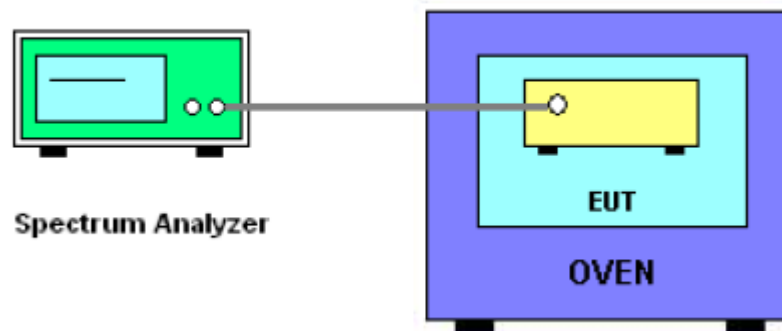
3.9.1 LIMIT

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

3.9.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6 \text{ ppm}$.
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is $-20^\circ\text{C} \sim 70^\circ\text{C}$.

3.9.3 TEST SETUP LAYOUT



3.9.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously un-modulation transmitting mode.

3.9.5 TEST RESULTS

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Frequency (5150-5250MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5180.0019	5180	0.0019	0.3668
		V max (V)	4.26	5180.0065	5180	0.0065	1.2548
		V min (V)	3.15	5180.0095	5180	0.0095	1.8340
Limits				Within 5150-5250MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5180.0073	5180	0.0073	1.4093
		T (°C)	-10	5180.0085	5180	0.0085	1.6409
		T (°C)	0	5180.0012	5180	0.0012	0.2317
		T (°C)	10	5180.0100	5180	0.0100	1.9270
		T (°C)	20	5180.0013	5180	0.0013	0.2510
		T (°C)	30	5180.0033	5180	0.0033	0.6337
		T (°C)	40	5180.0083	5180	0.0083	1.5987
		T (°C)	50	5180.0002	5180	0.0002	0.0295
		T (°C)	60	5180.0097	5180	0.0097	1.8675
		T (°C)	70	5180.0019	5180	0.0019	0.3758
Limits				Within 5150-5250MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5200.0014	5200	0.0014	0.2645
		V max (V)	4.26	5200.0017	5200	0.0017	0.3343
		V min (V)	3.15	5200.0003	5200	0.0003	0.0507
Limits				Within 5150-5250MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5200.0014	5200	0.0014	0.2645
		T (°C)	-10	5200.0017	5200	0.0017	0.3343
		T (°C)	0	5200.0003	5200	0.0003	0.0507
		T (°C)	10	5200.0015	5200	0.0015	0.2919
		T (°C)	20	5200.0011	5200	0.0011	0.2194
		T (°C)	30	5200.0011	5200	0.0011	0.2064
		T (°C)	40	5200.0005	5200	0.0005	0.1057
		T (°C)	50	5200.0018	5200	0.0018	0.3538
		T (°C)	60	5200.0007	5200	0.0007	0.1323
		T (°C)	70	5200.0000	5200	0.0000	0.0085
Limits				Within 5150-5250MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5240.0006	5240	0.0006	0.1131
		V max (V)	4.26	5240.0003	5240	0.0003	0.0534
		V min (V)	3.15	5240.0003	5240	0.0003	0.0493
Limits				Within 5150-5250MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5240.0018	5240	0.0018	0.3383
		T (°C)	-10	5240.0018	5240	0.0018	0.3352
		T (°C)	0	5240.0015	5240	0.0015	0.2842
		T (°C)	10	5240.0003	5240	0.0003	0.0537
		T (°C)	20	5240.0005	5240	0.0005	0.0893
		T (°C)	30	5240.0007	5240	0.0007	0.1249
		T (°C)	40	5240.0003	5240	0.0003	0.0522
		T (°C)	50	5240.0008	5240	0.0008	0.1468
		T (°C)	60	5240.0019	5240	0.0019	0.3547
		T (°C)	70	5240.0008	5240	0.0008	0.1583
Limits				Within 5150-5250MHz			
Result				Complies			

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Frequency (5250-5350MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5260.0010	5260	0.0010	0.1944
		V max (V)	4.26	5260.0010	5260	0.0010	0.1971
		V min (V)	3.15	5260.0019	5260	0.0019	0.3622
Limits				Within 5250-5350MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5260MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5260.0019	5260	0.0019	0.3569
		T (°C)	-10	5260.0009	5260	0.0009	0.1719
		T (°C)	0	5260.0004	5260	0.0004	0.0697
		T (°C)	10	5260.0013	5260	0.0013	0.2443
		T (°C)	20	5260.0016	5260	0.0016	0.3036
		T (°C)	30	5260.0019	5260	0.0019	0.3666
		T (°C)	40	5260.0019	5260	0.0019	0.3532
		T (°C)	50	5260.0013	5260	0.0013	0.2553
		T (°C)	60	5260.0016	5260	0.0016	0.3107
		T (°C)	70	5260.0013	5260	0.0013	0.2531
Limits				Within 5250-5350MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5280.0013	5280	0.00130	0.2455
		V max (V)	4.26	5280.0012	5280	0.00121	0.2284
		V min (V)	3.15	5280.0016	5280	0.00160	0.3039
Limits				Within 5250-5350MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5280MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5280.0012	5280	0.0012	0.2305
		T (°C)	-10	5280.0013	5280	0.0013	0.2483
		T (°C)	0	5280.0019	5280	0.0019	0.3637
		T (°C)	10	5280.0008	5280	0.0008	0.1506
		T (°C)	20	5280.0018	5280	0.0018	0.3318
		T (°C)	30	5280.0009	5280	0.0009	0.1616
		T (°C)	40	5280.0007	5280	0.0007	0.1307
		T (°C)	50	5280.0018	5280	0.0018	0.3464
		T (°C)	60	5280.0004	5280	0.0004	0.0747
		T (°C)	70	5280.0016	5280	0.0016	0.3070
Limits				Within 5250-5350MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5320.0006	5320	0.0006	0.1112
		V max (V)	4.26	5320.0006	5320	0.0006	0.1169
		V min (V)	3.15	5320.0016	5320	0.0016	0.2968
Limits				Within 5250-5350MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5320MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5320.0001	5320	0.0001	0.0274
		T (°C)	-10	5320.0010	5320	0.0010	0.1947
		T (°C)	0	5320.0001	5320	0.0001	0.0112
		T (°C)	10	5320.0019	5320	0.0019	0.3609
		T (°C)	20	5320.0011	5320	0.0011	0.2155
		T (°C)	30	5320.0017	5320	0.0017	0.3138
		T (°C)	40	5320.0014	5320	0.0014	0.2605
		T (°C)	50	5320.0011	5320	0.0011	0.2111
		T (°C)	60	5320.0001	5320	0.0001	0.0111
		T (°C)	70	5320.0011	5320	0.0011	0.2018
Limits				Within 5250-5350MHz			
Result				Complies			

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Frequency (5470-5725MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5500.0012	5500	0.0012	0.2150
		V max (V)	4.26	5500.0002	5500	0.0002	0.0411
		V min (V)	3.15	5500.0012	5500	0.0012	0.2258
Limits				Within 5470-5725MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5500MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5500.0002	5500	0.0002	0.0296
		T (°C)	-10	5500.0001	5500	0.0001	0.0262
		T (°C)	0	5500.0019	5500	0.0019	0.3393
		T (°C)	10	5500.0009	5500	0.0009	0.1570
		T (°C)	20	5500.0006	5500	0.0006	0.1154
		T (°C)	30	5500.0007	5500	0.0007	0.1249
		T (°C)	40	5500.0010	5500	0.0010	0.1836
		T (°C)	50	5500.0013	5500	0.0013	0.2382
		T (°C)	60	5500.0014	5500	0.0014	0.2570
		T (°C)	70	5500.0009	5500	0.0009	0.1670
Limits				Within 5470-5725MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5600MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5600.0011	5600	0.0011	0.1967
		V max (V)	4.26	5600.0010	5600	0.0010	0.1826
		V min (V)	3.15	5600.0011	5600	0.0011	0.2013
Limits				Within 5470-5725MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5600MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5600.0005	5600	0.0005	0.0846
		T (°C)	-10	5600.0007	5600	0.0007	0.1308
		T (°C)	0	5600.0014	5600	0.0014	0.2506
		T (°C)	10	5600.0014	5600	0.0014	0.2468
		T (°C)	20	5600.0017	5600	0.0017	0.2953
		T (°C)	30	5600.0007	5600	0.0007	0.1241
		T (°C)	40	5600.0007	5600	0.0007	0.1315
		T (°C)	50	5600.0002	5600	0.0002	0.0280
		T (°C)	60	5600.0005	5600	0.0005	0.0897
		T (°C)	70	5600.0009	5600	0.0009	0.1601
Limits				Within 5470-5725MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5700.0001	5700	0.0001	0.0098
		V max (V)	4.26	5700.0018	5700	0.0018	0.3225
		V min (V)	3.15	5700.0010	5700	0.0010	0.1793
Limits				Within 5470-5725MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5700MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5700.0019	5700	0.0019	0.3414
		T (°C)	-10	5700.0015	5700	0.0015	0.2600
		T (°C)	0	5700.0008	5700	0.0008	0.1438
		T (°C)	10	5700.0009	5700	0.0009	0.1543
		T (°C)	20	5700.0001	5700	0.0001	0.0182
		T (°C)	30	5700.0019	5700	0.0019	0.3289
		T (°C)	40	5700.0014	5700	0.0014	0.2464
		T (°C)	50	5700.0019	5700	0.0019	0.3340
		T (°C)	60	5700.0003	5700	0.0003	0.0563
		T (°C)	70	5700.0019	5700	0.0019	0.3413
Limits				Within 5470-5725MHz			
Result				Complies			

EUT :	POS Terminal	Model Name. :	PT7010
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Frequency(5745-5825MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5745.0011	5745	0.0011	0.1839
		V max (V)	4.26	5745.0014	5745	0.0014	0.2494
		V min (V)	3.15	5745.0004	5745	0.0004	0.0737
Limits				Within 5745-5850MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5745.0015	5745	0.0015	0.2566
		T (°C)	-10	5745.0003	5745	0.0003	0.0536
		T (°C)	0	5745.0015	5745	0.0015	0.2613
		T (°C)	10	5745.0015	5745	0.0015	0.2536
		T (°C)	20	5745.0009	5745	0.0009	0.1523
		T (°C)	30	5745.0015	5745	0.0015	0.2561
		T (°C)	40	5745.0015	5745	0.0015	0.2612
		T (°C)	50	5745.0018	5745	0.0018	0.3105
		T (°C)	60	5745.0004	5745	0.0004	0.0618
		T (°C)	70	5745.0001	5745	0.0001	0.0089
Limits				Within 5745-5850MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5785.0011	5785	0.00108	-0.1874
		V max (V)	4.26	5785.0017	5785	0.00171	-0.2963
		V min (V)	3.15	5785.0010	5785	0.00098	-0.1698
Limits				Within 5745-5850MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5785.0015	5785	0.0015	0.2624
		T (°C)	-10	5785.0001	5785	0.0001	0.0178
		T (°C)	0	5785.0017	5785	0.0017	0.2929
		T (°C)	10	5785.0013	5785	0.0013	0.2334
		T (°C)	20	5785.0001	5785	0.0001	0.0215
		T (°C)	30	5785.0012	5785	0.0012	0.2152
		T (°C)	40	5785.0005	5785	0.0005	0.0835
		T (°C)	50	5785.0017	5785	0.0017	0.2896
		T (°C)	60	5785.0015	5785	0.0015	0.2664
		T (°C)	70	5785.0018	5785	0.0018	0.3129
Limits				Within 5745-5850MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	3.7	5825.0003	5825	0.0003	0.0476
		V max (V)	4.26	5825.0020	5825	0.0020	0.3362
		V min (V)	3.15	5825.0002	5825	0.0002	0.0364
Limits				Within 5745-5850MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	3.7	T (°C)	-20	5825.0006	5825	0.0006	0.1079
		T (°C)	-10	5825.0016	5825	0.0016	0.2783
		T (°C)	0	5825.0008	5825	0.0008	0.1303
		T (°C)	10	5825.0009	5825	0.0009	0.1563
		T (°C)	20	5825.0011	5825	0.0011	0.1919
		T (°C)	30	5825.0019	5825	0.0019	0.3297
		T (°C)	40	5825.0016	5825	0.0016	0.2751
		T (°C)	50	5825.0016	5825	0.0016	0.2818
		T (°C)	60	5825.0007	5825	0.0007	0.1158
		T (°C)	70	5825.0005	5825	0.0005	0.0839
Limits				Within 5745-5850MHz			
Result				Complies			

3.10 DYNAMIC FREQUENCY SELECTION(DFS)

3.10.1 APPLICABILITY OF DFS REQUIREMENTS

EUT is client and operates as client without radar detection function.

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes
Client Beacon Test	N/A	Yes	Yes

Additional requirements for devices with multiple bandwidth modes	Operational Mode	
	Master or Client With Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note

Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.

3.10.2 INTERFERENCE THRESHOLD VALUES, MASTER OR CLIENT INCORPORATING IN-SERVICE MONITORING

Maximum Transmit Power	Value (see notes 1, 2, and 3)
EIRP $\geq$ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.

Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.

Note 3: EIRP is based on the highest antenna gain.

3.10.3 DFS RESPONSE REQUIREMENT VALUES

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the 99% power bandwidth See Note 3.

Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:

- For the Short pulse radar Test Signals this instant is the end of the Burst.
- For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.
- For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate Channel changes (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.

3.10.4 SHORT PULSE RADAR TEST WAVEFORMS

As the EUT is a Client Device with no Radar Detection, only one type radar pulse is required for the testing. Radar Pulse type 0 was used in the evaluation of the Client device for the purpose of measuring the Channel Move Time and the Channel Closing Transmission Time.

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	60%	30
1	1	Test A Test B	$\text{Roundup}\left(\frac{1}{360} \cdot \frac{19 \cdot 10^6}{\text{PRI}_{\text{max}}}\right)$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a

Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A

A minimum of 30 unique waveforms are required for each of the short pulse radar types 2 through 4. For short pulse radar type 1, the same waveform is used a minimum of 30 times. If more than 30 waveforms are used for short pulse radar types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms.

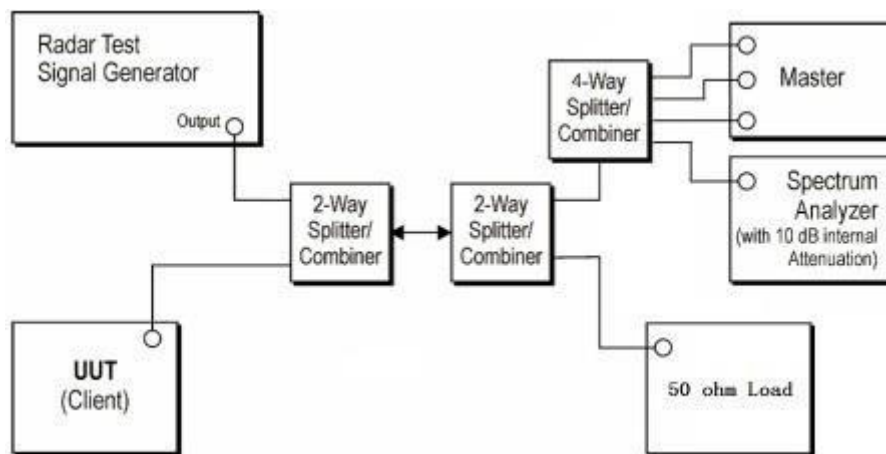
If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B. The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

3.10.5 CALIBRATION SETUP AND DFS TEST RESULTS

Radar Waveform Calibration Procedure

- 1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master
- 2) The interference Radar Detection Threshold Level is $-62\text{dBm} - 2\text{dBi} + 1\text{dB} = -63\text{dBm}$ that had been taken into account the output power range and antenna gain.
- 3) The following equipment setup was used to calibrate the conducted radar waveform. A vector signal generator was utilized to establish the test signal level for radar type 0. During this process there were no transmissions by either the master or client device. The spectrum analyzer was switched to the zero spans (time domain) at the frequency of the radar waveform generator. Peak detection was used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The spectrum analyzer had offset -1.0dB to compensate RF cable loss 1.0dB.
- 4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was $-62\text{dBm} - 2\text{dBi} + 1\text{dB} = -63\text{dBm}$. Capture the spectrum analyzer plots on short pulse radar waveform.

3.10.6 CONDUCTED CALIBRATION SETUP



Wireless AP	Manufacturer	LINKSYS LLC
	Model NO.	WRT32X
	FCC ID	Q87-WRT3200ACM

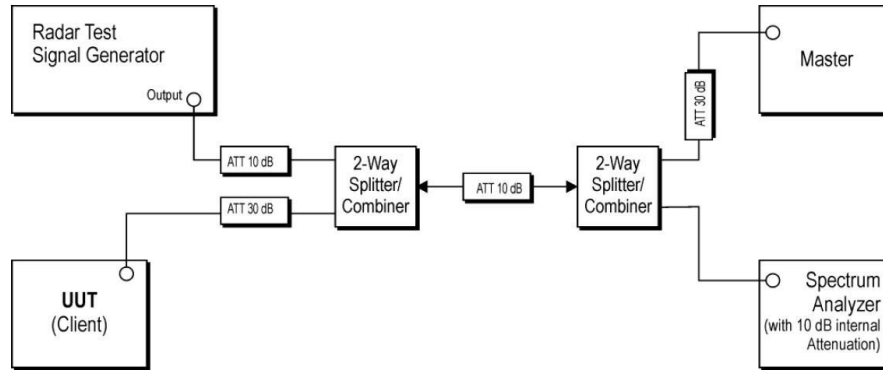
3.10.7 RADAR WAVEFORM CALIBRATION RESULT

Test data reference attachment.

3.10.8 IN-SERVICE MONITORING: CHANNEL MOVE TIME, CHANNEL CLOSING TRANSMISSION TIME AND NON-OCCUPANCY PERIOD

TEST CONFIGURATION:

Setup for Client with injection at the Master



TEST PROCEDURE:

1. The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
2. The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -61dBm at the antenna port of the master device
3. A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
4. EUT will associate with the master at channel. The file "iperf.exe" specified by the FCC is Streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using Media Player Classic Ver. 6.4.8.6 in order to properly load the network for the entire period of the test.
5. When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
6. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel Measure and record the transmissions from the UUT during the observation time (Channel Move Time). One 15 seconds plot is reported for the Short Pulse Radar Type 0. The plot for the Short Pulse Radar Types start at the end of the radar burst. The Channel Move Time will be calculated based on the zoom In 600ms plot of the Short Pulse Radar Type
7. Measurement of the aggregate duration of the Channel Closed Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: $Dwell (0.3ms) = S (12000ms) / B (4000)$; where Dwell is the dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: $C (ms) = N \times Dwell (0.3ms)$; where C is the Closing Time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and Dwell is the dwell time per bin.
8. Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

TEST MODE:

Please refer to the clause 2.2

3.10.9 RESULT OF CHANNEL MOVE TIME, CHANNEL CLOSING TRANSMISSION TIME AND NON-OCCUPANCY PERIOD FOR CLIENT BEACON TEST

Test data reference attachment.

4. ANTENNA REQUIREMENT

4.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

4.2 EUT ANTENNA

The EUT antenna is permanent attached FPC antenna. It comply with the standard requirement.

END OF REPORT