Shenzhen Certification Technologh Service Co., Ltd
3F, Bldg27,Area A, Tanglang Industrial Zone, Xili Town, Nanshan District, ShenZhen, Guang dong, P.R. China.

TEST REPORT

FCC ID: XSAXV50

Applicant：DOCUPORT INC.

Address : 555 Rene-Levesque West#1130,Montreal,QC Canada H2Z1B1

Equipment Under Test(EUT):

Name : Penscanner

Model : XV50;XV10;XV05;X50;X10;X05

In Accordance with: FCC 15.247

Report No : STE090925544

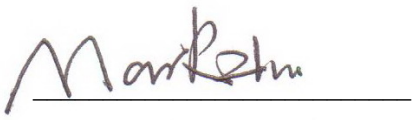
Date of Test : Sep 26-Sep 27, 2009

Date of Issue : Sep 28, 2009

Test Result: **PASS**

In the configuration tested, the EUT complied with the standards specified above

Authorized Signature



(Mark Zhu)

General Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Certification Technology Service Co., Ltd. Or test done by Shenzhen Certification Technology Service Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Certification Technology Service Co., Ltd. Approvals in writing.

Contents

1. General Information

1.1. Description of Device (EUT)

Trade Name	:	Planon
EUT Name	:	Penscanner
Model No.	:	XV50;XV10;XV05;X50;X10;X05
Difference of model No		X Series(No voice support) and XV Series(has the voice support),The 05 and 10 models are the same(different packaging only),model 50 is an enhanced version of the product with all the features that other model has. So XV50 should be the one for testing.
Power supply	:	DC 3.7V form battery
Radio Technology	:	Bluetooth
Operation frequency	:	2402MHz-2480MHz
Modulation	:	GFSK, π/4 DQPSK,8- DPSK
Antenna Type	:	Integral Patch Antenna,Maximum Gain 1.36dBi
Applicant	:	DOCUPORT INC
Address	:	555 Rene-Levesque West#1130,Montreal,QC Canada H2Z1B1

1.2. Test Lab information

Shenzhen Certification Technology Service Co.,Ltd.
3F, Bldg.27, Area A, Tanglang Industrial Zone, Xili Town, Nanshan District,
Shenzhen 518055, Guangdong, P.R. China
FCC Registered No.:305283

2. Summary of test

2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) DA 00-705	PASS
20dB Bandwidth	FCC Part 15: 15.215 DA 00-705	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) DA 00-705	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.4: 2003 DA 00-705	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) DA 00-705	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.4: 2003 DA 00-705	PASS
Antenna requirement	FCC Part 15: 15.203	PASS
MPE ESTIMATION	FCC Part 2: 2.1093	PASS

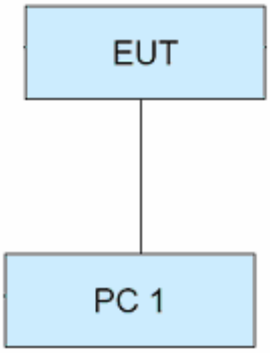
2.2. Assistant equipment used for test

Description	:	Test PC 1
Manufacturer	:	Dell
Model No.	:	D430

2.3. Block Diagram

1,For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground.EUT was be set into BT test mode by Bluesuite software before test.

2,For Power Line Conducted Emissions Test: EUT was connected to PC by 1m USB line and charged form PC1'S usb port.



2.4. Test mode

The test software "Bluesuite" was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Tested mode, channel, and data rate information		
Mode	Channel	Frequency (MHz)
BDR:GFSK	Low :CH1	2402
	Middle: CH40	2441
	High: CH79	2480
EDR:8-DPSK	Low :CH1	2402
	Middle: CH40	2441
	High: CH79	2480

2.5. Test Conditions

Temperature range	21-25℃
Humidity range	40-75%
Pressure range	86-106kPa

2.6. Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	1×10-9	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2℃	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

2.7. Test Equipment

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	16/06/2009	1Year
Spectrum analyzer	Agilent	E4443A	MY46185649	06/06/2009	1Year
Receiver	R&S	ESCI	100492	04/06/2009	1Year
Receiver	R&S	ESCI	101202	07/01/2009	1Year
Bilog Antenna	Sunol	JB3	A121206	04/06/2009	1Year
Horn Antenna	EMCO	3115	640201028-06	04/06/2009	1Year
Power Meter	Anritsu	ML2487A	6K00001491	02/23/2009	1Year
ETS Horn Antenna	ETS	3160	SEL0076	12/08/2009	1Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	15/06/2009	1Year
Cable	Resenberger	N/A	No.1	04/06/2009	1Year
Cable	SCHWARZBECK	N/A	No.2	04/06/2009	1Year
Cable	SCHWARZBECK	N/A	No.3	04/06/2009	1Year
Pre-amplifier	R&S	AFS42-00101 800-25-S-42	SEL0081	18/06/2009	1Year
Pre-amplifier	R&S	AFS33-18002650-30-8P-44	SEL0080	18/06/2009	1Year

3. Maximum Peak Output power

3.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts, the e.i.r.p shall not exceed 4W

3.2. Test Procedure

(1).The EUT was placed on a 0.8m high table in the chamber and turned on in continuously transmitting mode.

(2).The maximum fundamental emission (E) at 3m distance was measured and recorded with receive antenna in both vertical and horizontal by rotating the turntable and by moved up and down antenna,the test Spectrum Analyzer was set as below

RBW: 2MHz (>20dB bandwidth of signal)
VBW:3MHz
Detector: Peak

(3). Calculate the transmitter's peak power using the following equation:

$$P = [(E*D)^2]/(30G)$$

E is the measured maximum fundamental field strength in V/m
G is the numeric gain of the transmitting antenna with reference to an isotropic radiator.
D is the distance in meters from which the field strength was measured.
P is the power in watts

3.3. Test Result

EUT: Penscanner M/N:XV50					
Test date: 2009-09-26		Test site: RF site Tested by: TaTa jiang			
Mode	Freq (MHz)	Maximum fundamental emission (E) at 3m (dBuV/m)	Result (dBm)	Limit (dBm)	Margin (dB)
GFSK	2402	98.71	2.12	30	27.88
	2441	98.91	2.32	30	27.68
	2480	98.69	2.10	30	27.90
8-DPSK	2402	98.48	1.89	30	28.11
	2441	98.49	1.90	30	28.10
	2480	98.51	1.92	30	28.08
Conclusion: PASS					

4. 20dB bandwidth

4.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.2. Test Procedure

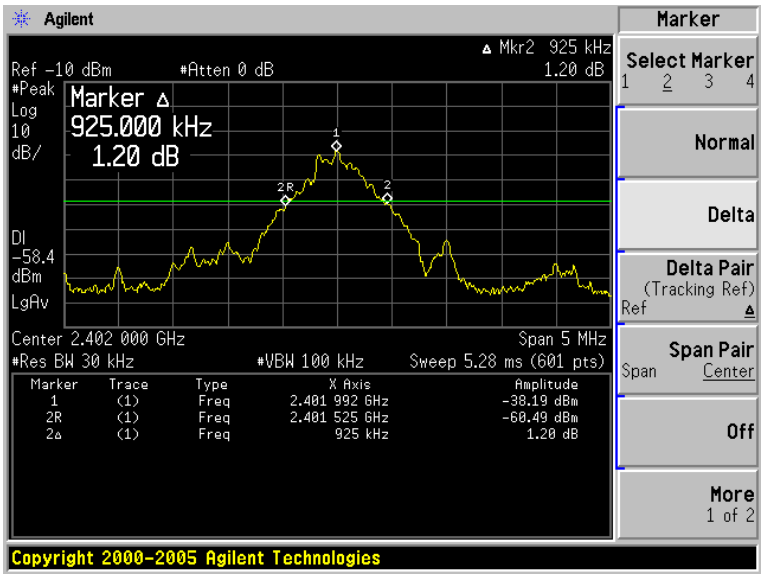
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

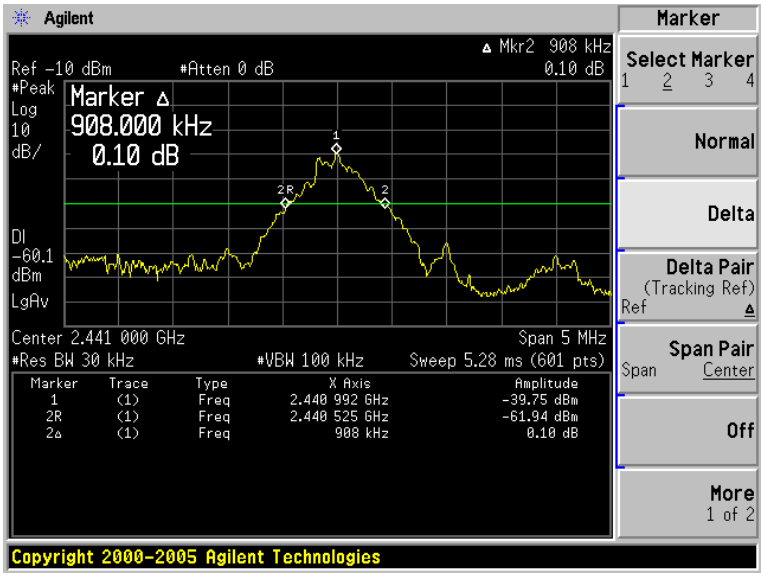
4.3. Test Result

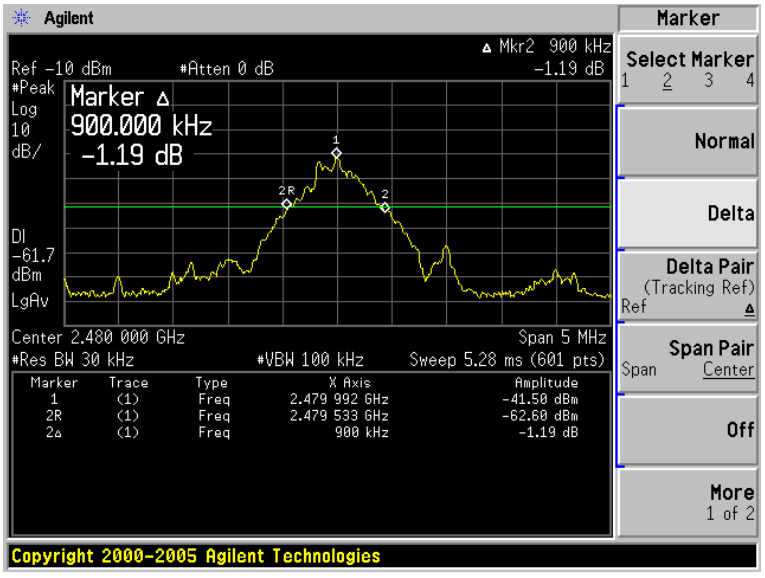
EUT: Penscanner M/N:XV50				
Test date: 2009-09-26		Test site: RF site Tested by: TaTa jiang		
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion
GFSK	2402	0.925	/	PASS
	2441	0.908	/	PASS
	2480	0.900	/	PASS
8-DPSK	2402	1.250	/	PASS
	2441	1.258	/	PASS
	2480	1.267	/	PASS

Orginal Test data For 20dB bandwidth

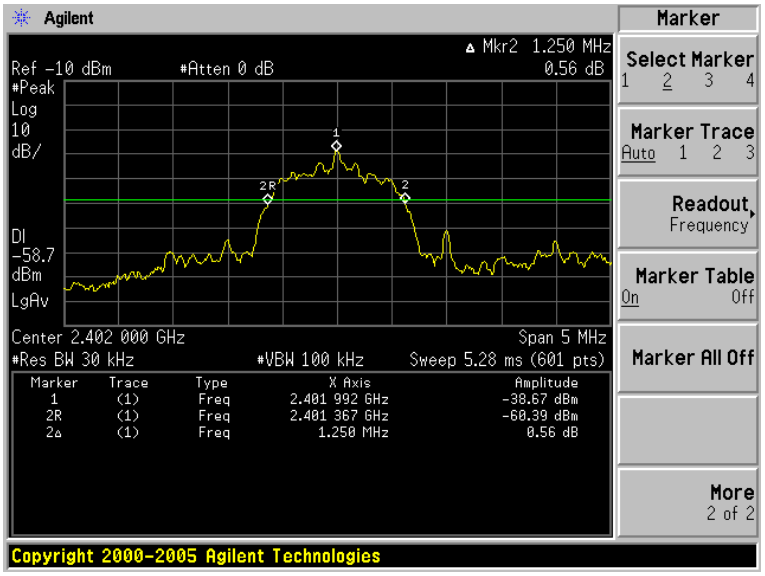
GFSK

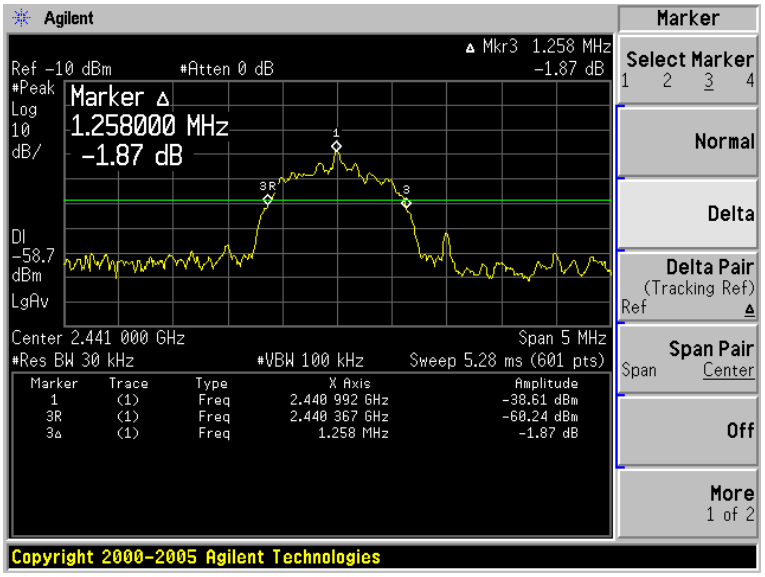


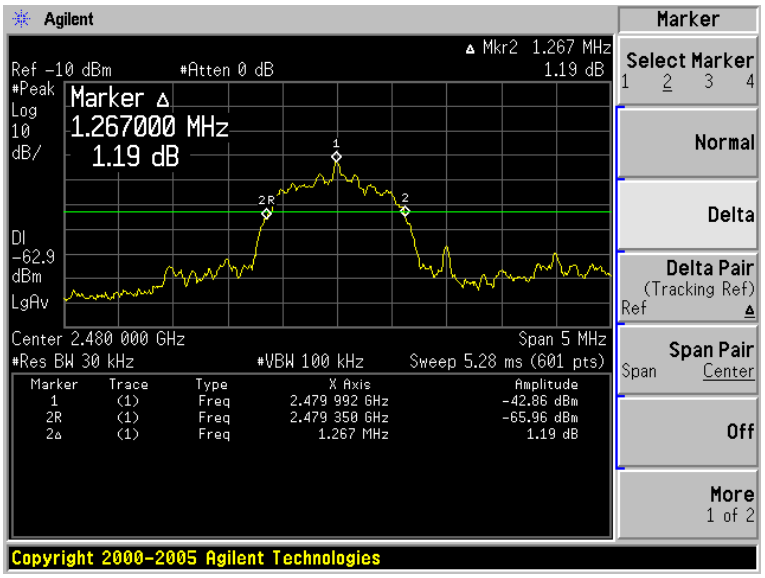




8-DPSK


Agilent
Marker
Δ Mkr2 1.250 MHz
0.56 dB
Ref -10 dBm
#Atten 0 dB
#Peak
Log
10
dB/
Dl
-58.7
dBm
LgAv
Center 2.402 000 GHz
Span 5 MHz
#Res BW 30 kHz
#VBW 100 kHz
Sweep 5.28 ms (601 pts)
Marker Trace X Axis Amplitude
1 (1) Freq 2.401 992 GHz -38.67 dBm
2R (1) Freq 2.401 367 GHz -60.39 dBm
2Δ (1) Freq 1.250 MHz 0.56 dB
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Copyright 2000-2005 Agilent Technologies


Agilent
Marker
Δ Mkr3 1.258 MHz
-1.87 dB
Ref -10 dBm
#Atten 0 dB
Marker Δ
1.258000 MHz
-1.87 dB
#Peak
Log
10
dB/
Dl
-58.7
dBm
LgAv
Center 2.441 000 GHz
Span 5 MHz
#Res BW 30 kHz
#VBW 100 kHz
Sweep 5.28 ms (601 pts)
Marker Trace X Axis Amplitude
1 (1) Freq 2.440 992 GHz -38.61 dBm
3R (1) Freq 2.440 367 GHz -60.24 dBm
3Δ (1) Freq 1.258 MHz -1.87 dB
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Copyright 2000-2005 Agilent Technologies


Agilent
Marker
Δ Mkr2 1.267 MHz
1.19 dB
Ref -10 dBm
#Atten 0 dB
Marker Δ
1.267000 MHz
1.19 dB
#Peak
Log
10
dB/
Dl
-62.9
dBm
LgAv
Center 2.480 000 GHz
Span 5 MHz
#Res BW 30 kHz
#VBW 100 kHz
Sweep 5.28 ms (601 pts)
Marker Trace X Axis Amplitude
1 (1) Freq 2.479 992 GHz -42.86 dBm
2R (1) Freq 2.479 350 GHz -65.96 dBm
2Δ (1) Freq 1.267 MHz 1.19 dB
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
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5. Carrier Frequency Separation

5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW

5.2. Test Procedure

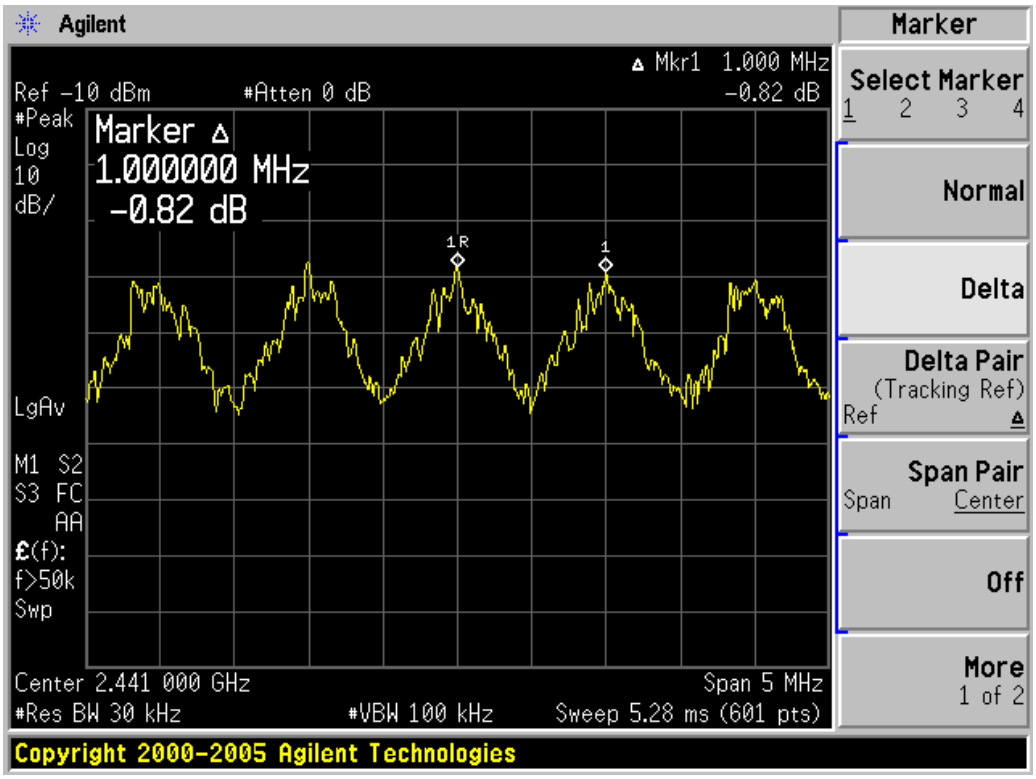
The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

5.3. Test Result

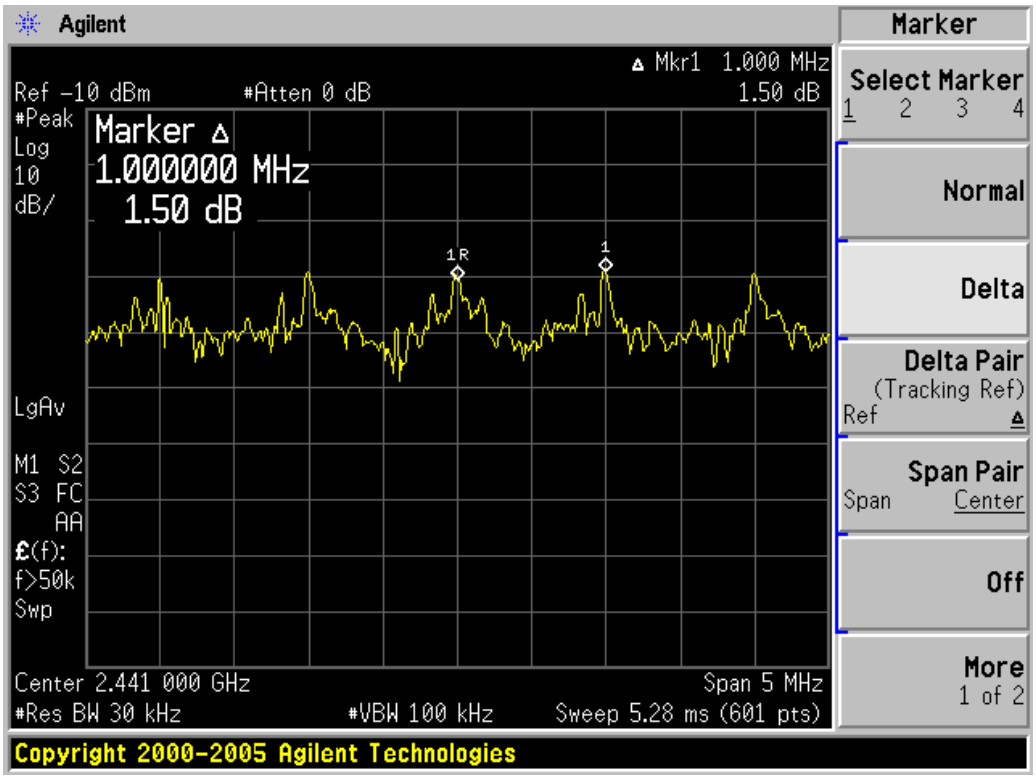
EUT: Penscanner M/N:XV50				
Test date: 2009-09-26		Test site: RF site	Tested by: TaTa jiang	
Mode	Channel separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz) 2/3 20dB bandwidth	Conclusion
GFSK	1.0	0.908	0.605	PASS
8-DPSK	1.0	1.258	0.838	PASS

Orginal test data for channel separation

GFSK



DPSK



6. Number Of Hopping Channel

6.1. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

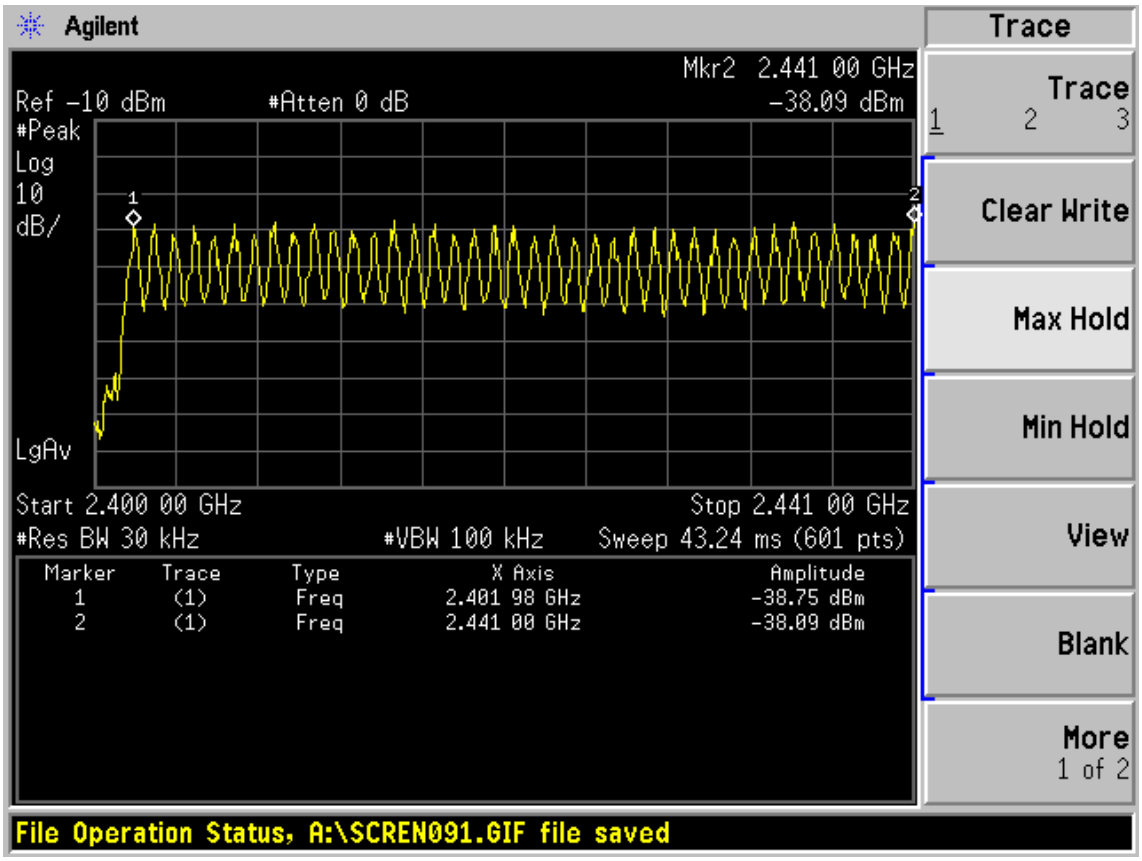
6.2. Test Procedure

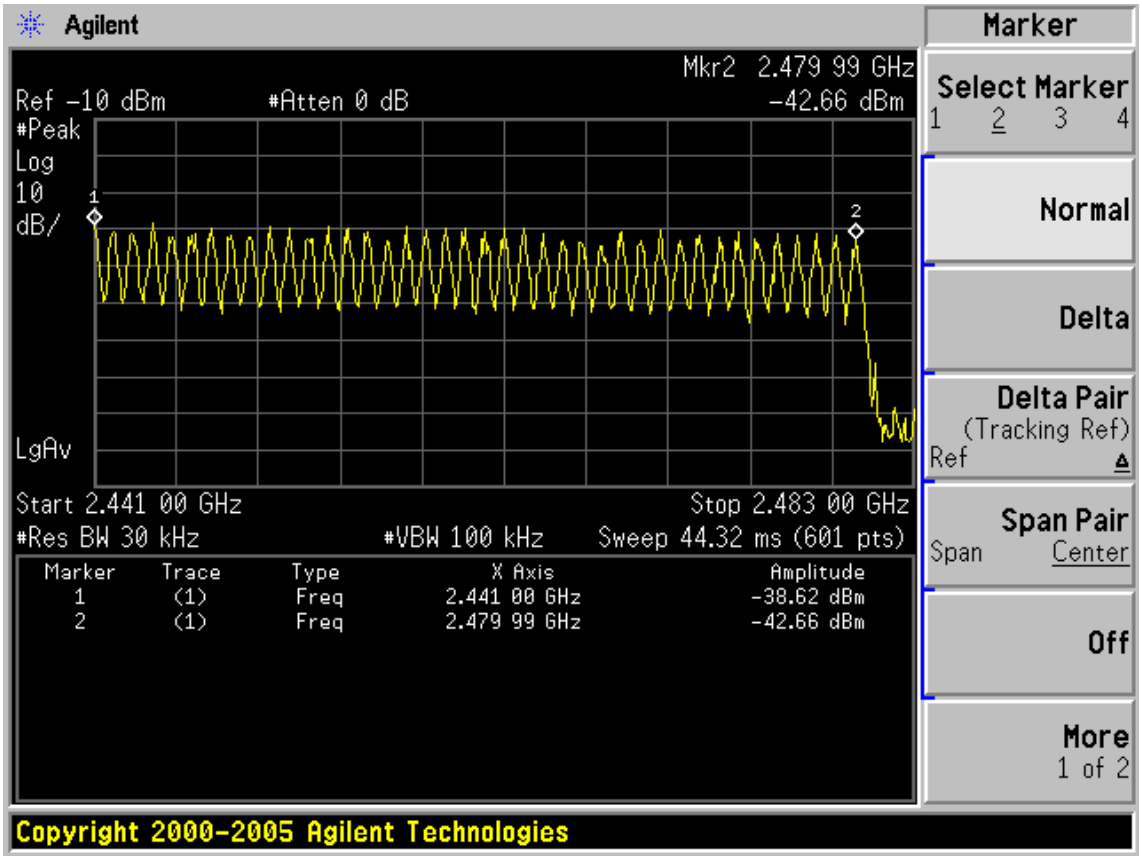
The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 1MHz VBW.

6.3. Test Result

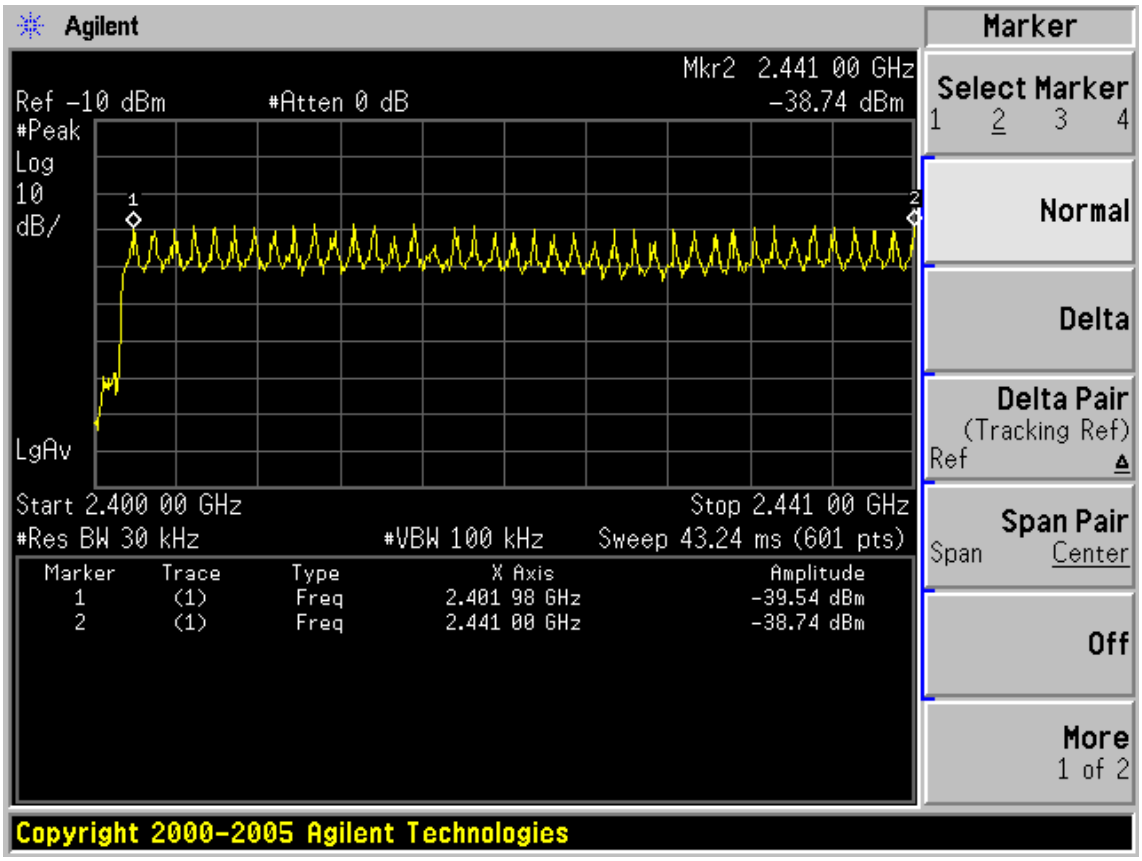
EUT: Penscanner M/N:XV50			
Test date: 2009-09-26	Test site: RF site	Tested by: TaTa jiang	
Mode	Number of hopping channel	Limit	Conclusion
GFSK	79	>15	PASS
8-DPSK	79	>15	PASS

Original test data for hopping channel number
GFSK:





8-DPSK:


Agilent
Marker
Mkr2 2.441 00 GHz
Ref -10 dBm
#Atten 0 dB
-38.74 dBm
#Peak
Log
10
dB/
LgAv
Start 2.400 00 GHz
Stop 2.441 00 GHz
#Res BW 30 kHz
#VBW 100 kHz
Sweep 43.24 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.401 98 GHz -39.54 dBm
2 (1) Freq 2.441 00 GHz -38.74 dBm
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
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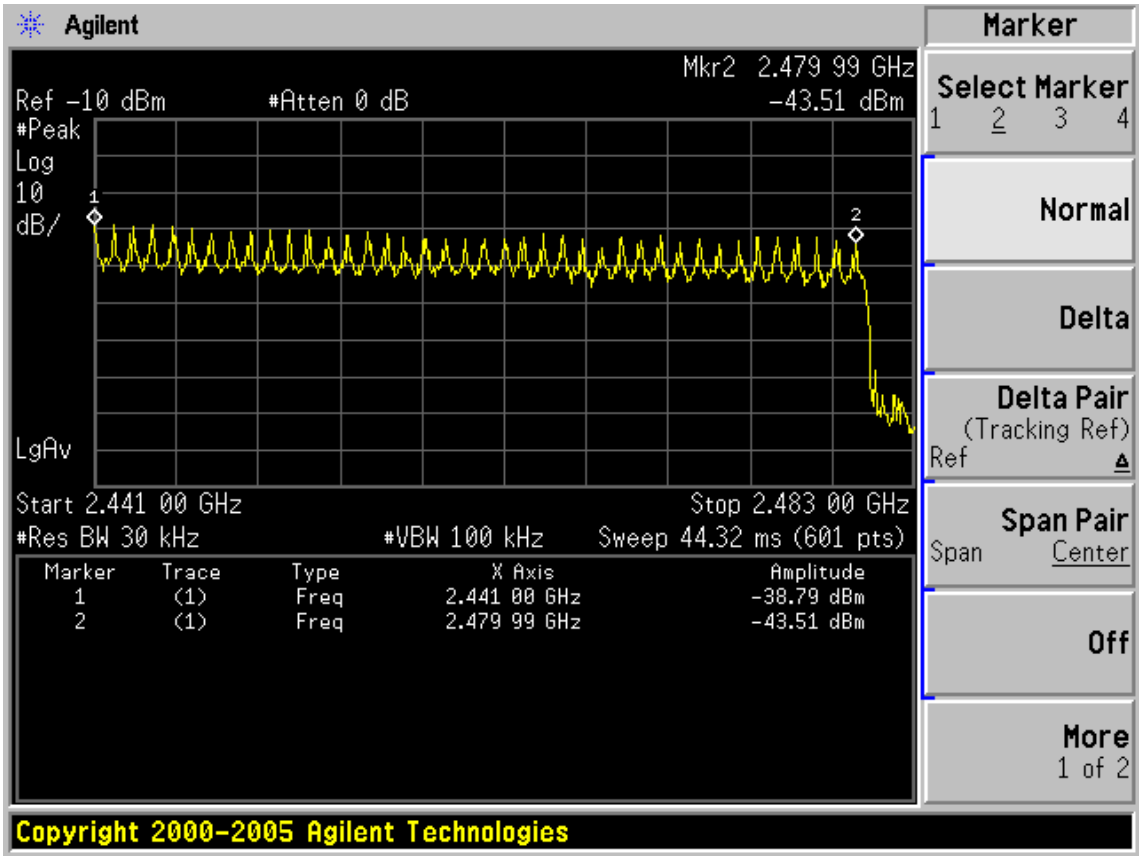
Agilent
Marker
Mkr2 2.479 99 GHz
Ref -10 dBm
#Atten 0 dB
-43.51 dBm
#Peak
Log
10
dB/
LgAv
Start 2.441 00 GHz
Stop 2.483 00 GHz
#Res BW 30 kHz
#VBW 100 kHz
Sweep 44.32 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 2.441 00 GHz -38.79 dBm
2 (1) Freq 2.479 99 GHz -43.51 dBm
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
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7. Dwell Time

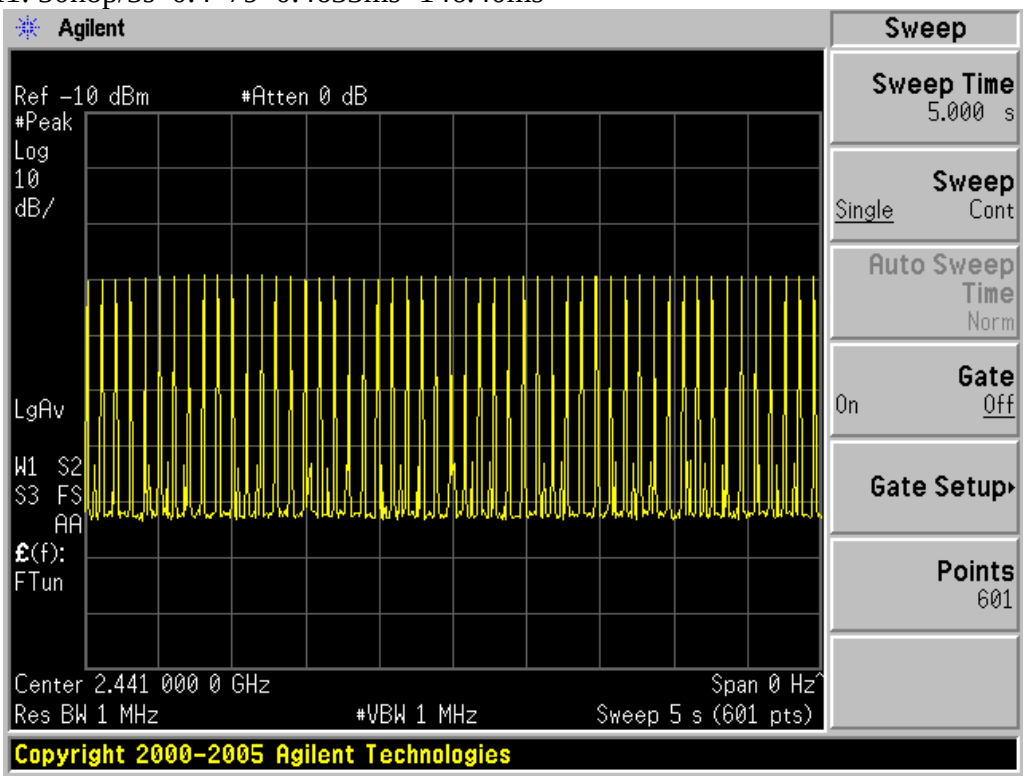
7.1. Limit

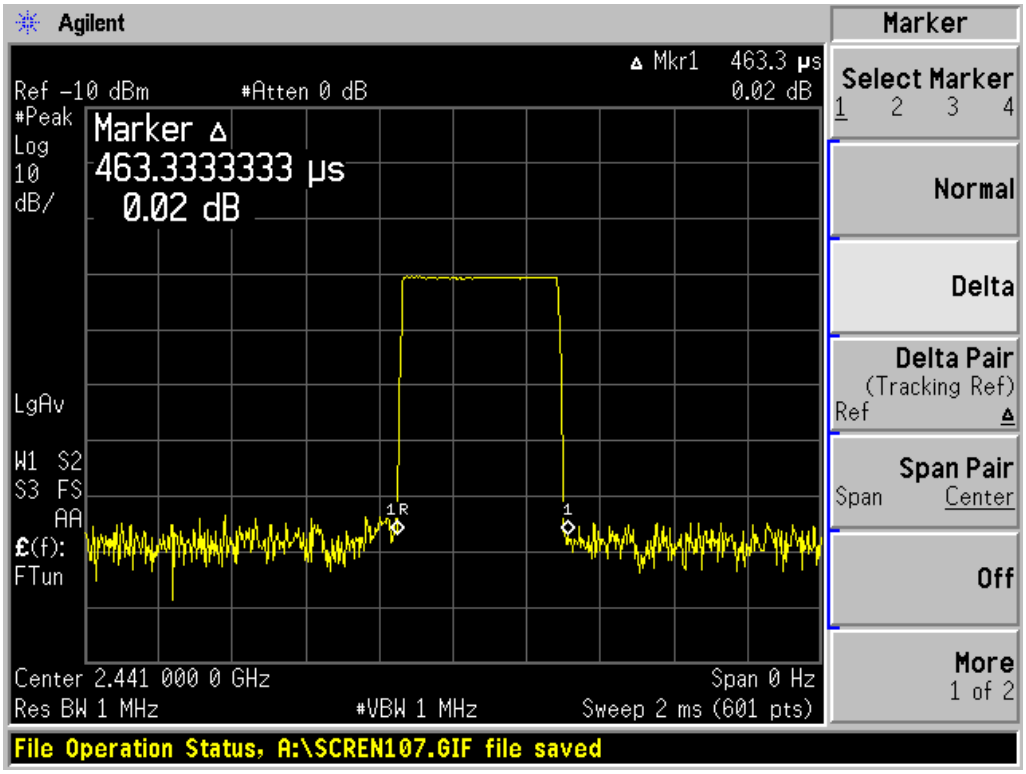
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

7.2. Test Result

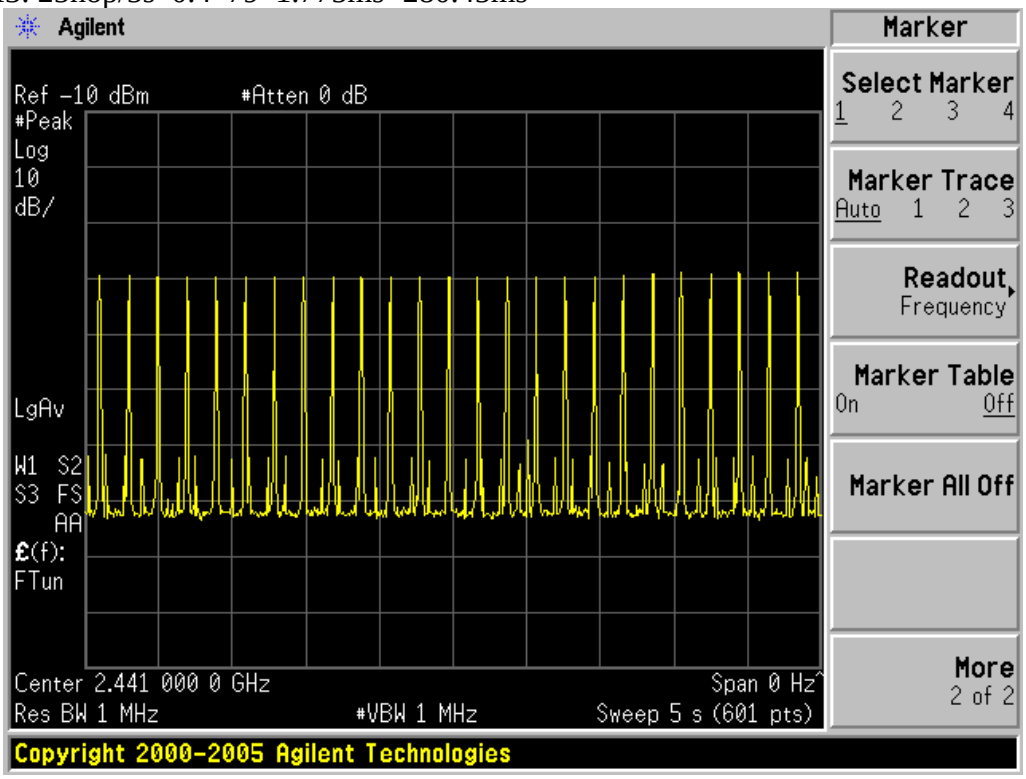
EUT: Penscanner M/N:XV50			
Test date: 2009-09-26	Test site: RF site	Tested by: TaTa jiang	
Mode	Number of hopping channel	Limit	Conclusion
DH1	146.40ms	<400ms	PASS
DH3	280.45ms	<400ms	PASS
DH5	311.75ms	<400ms	PASS
3-DH1	153.80ms	<400ms	PASS
3-DH3	277.76ms	<400ms	PASS
3-DH5	306.70ms	<400ms	PASS

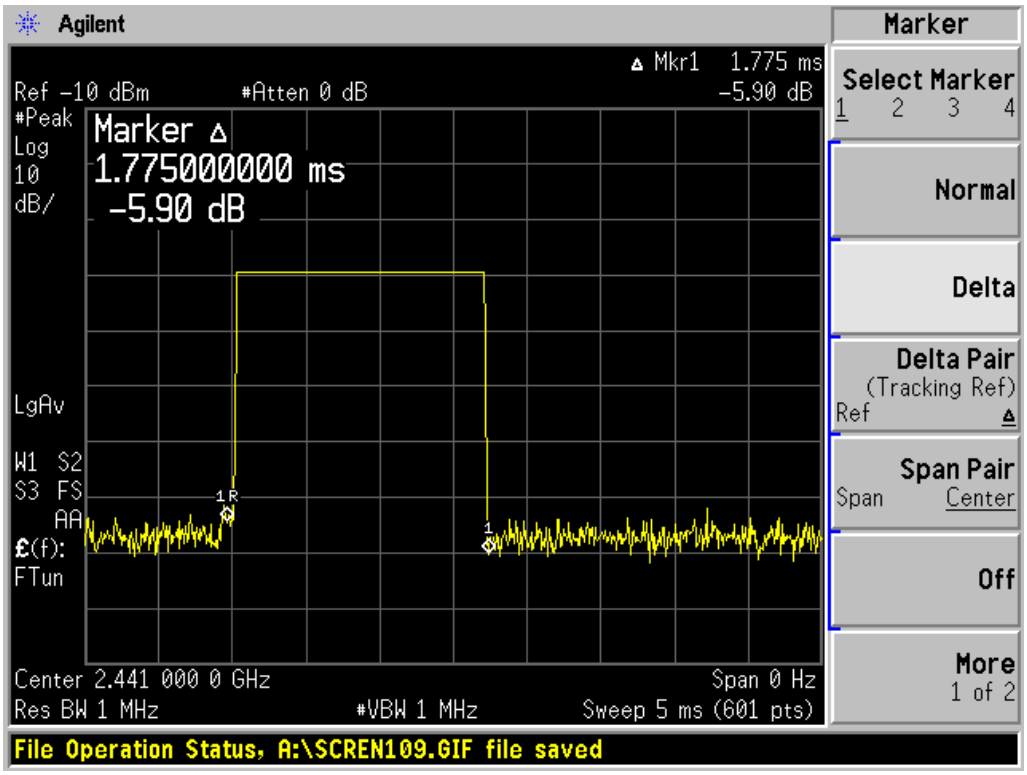
Original Test data
DH1: 50hop/5s*0.4*79*0.4633ms=146.40ms



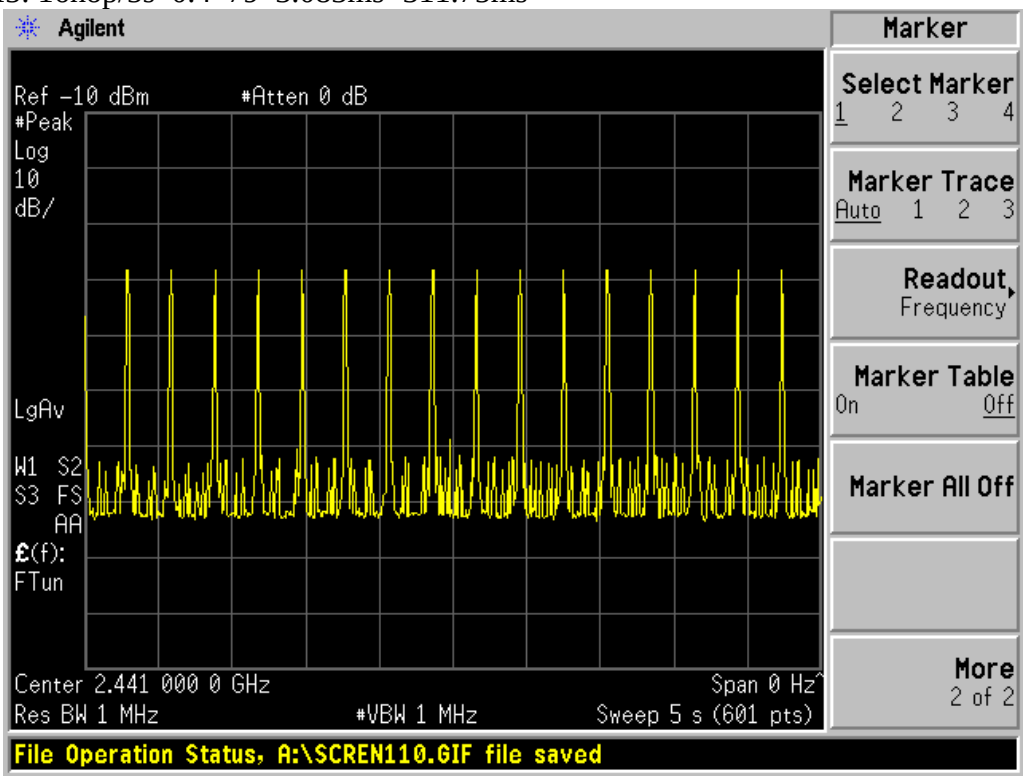


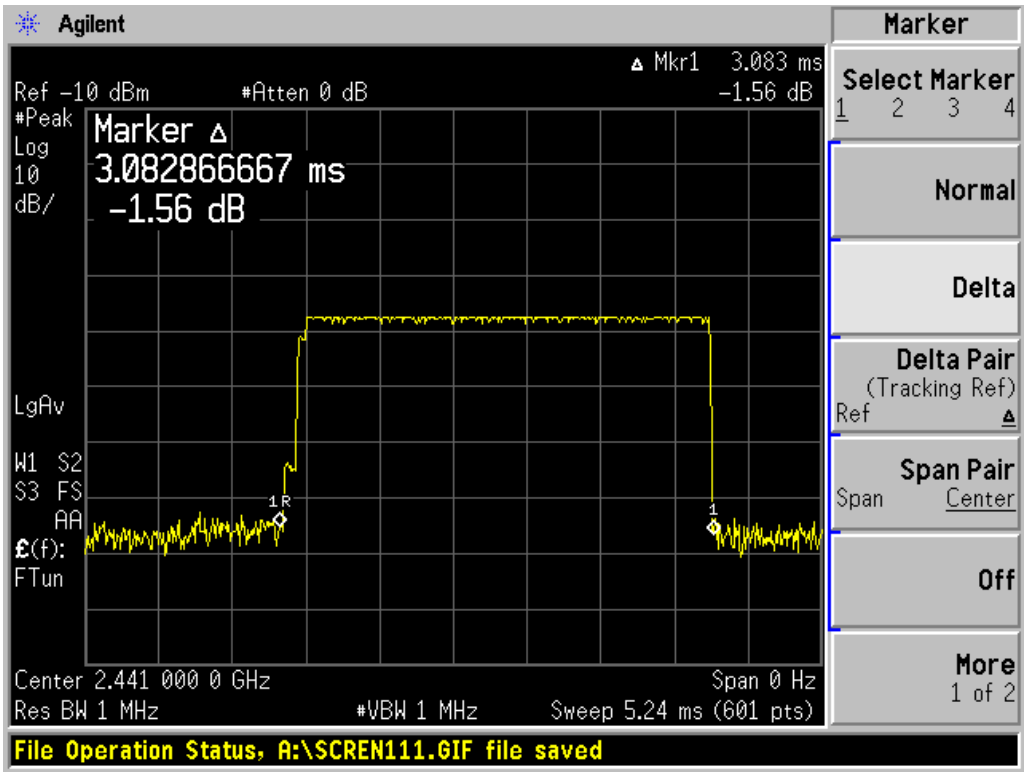
DH3: 25hop/5s*0.4*79*1.775ms=280.45ms



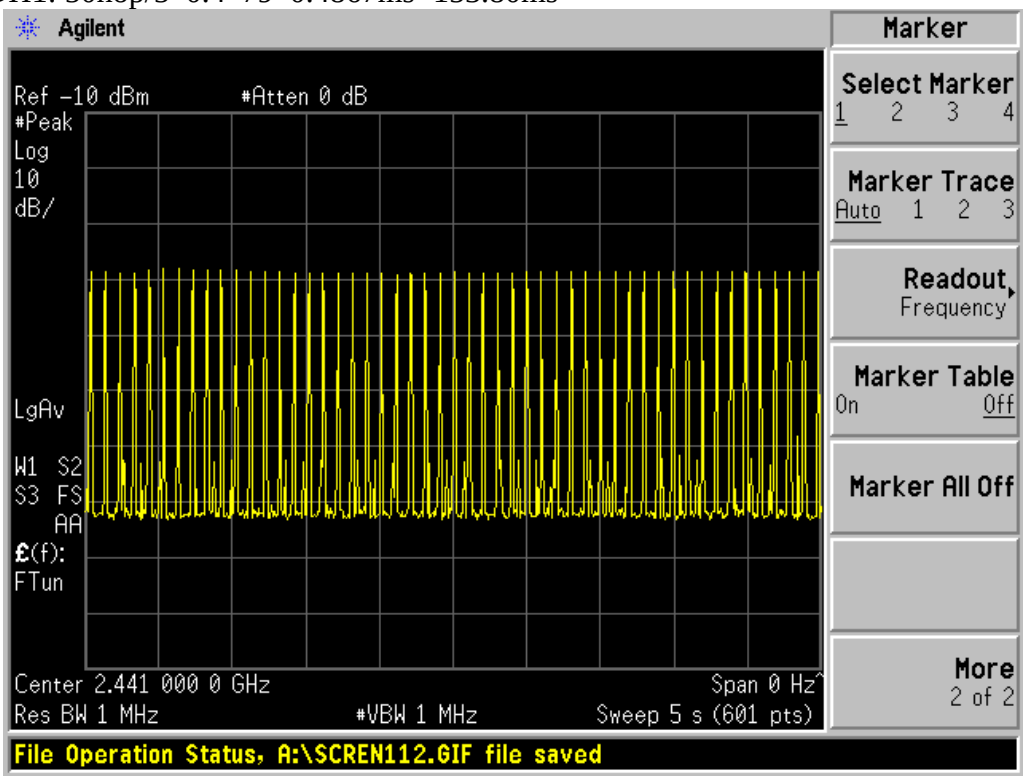


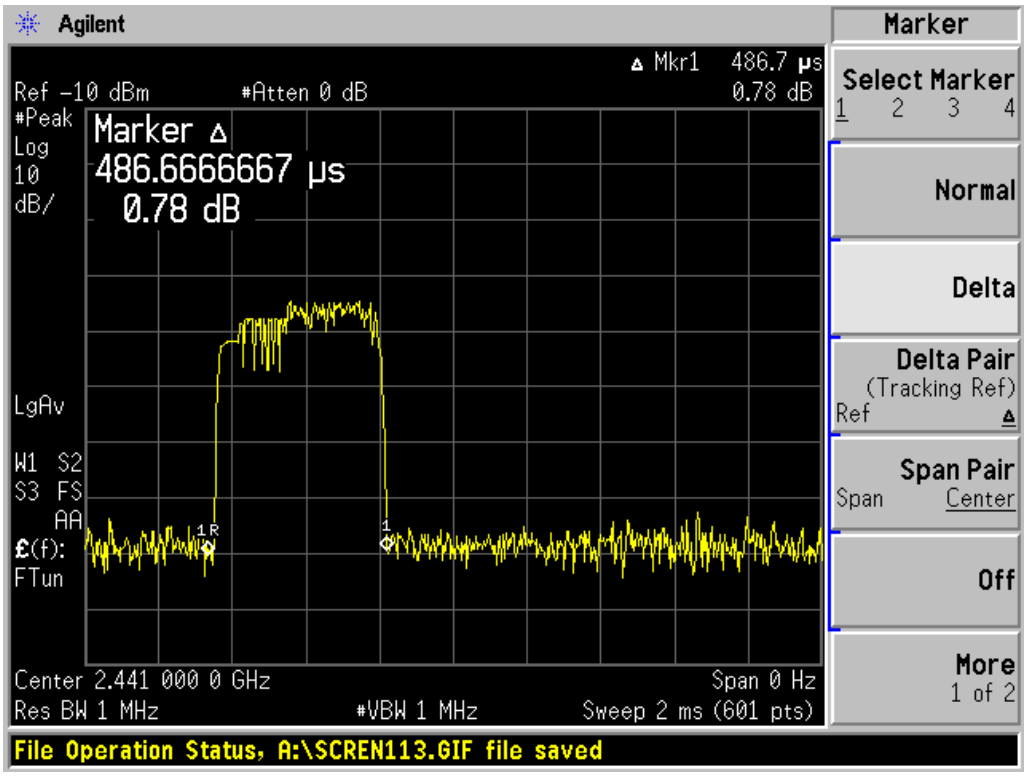
DH5: 16hop/5s*0.4*79*3.083ms=311.75ms



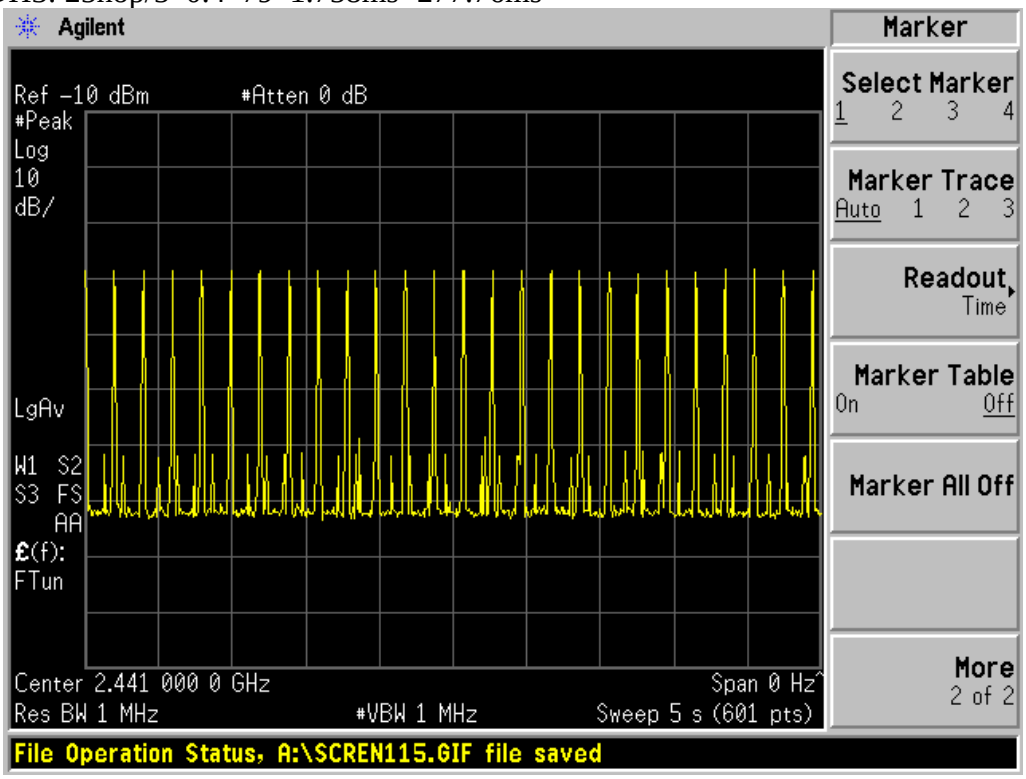


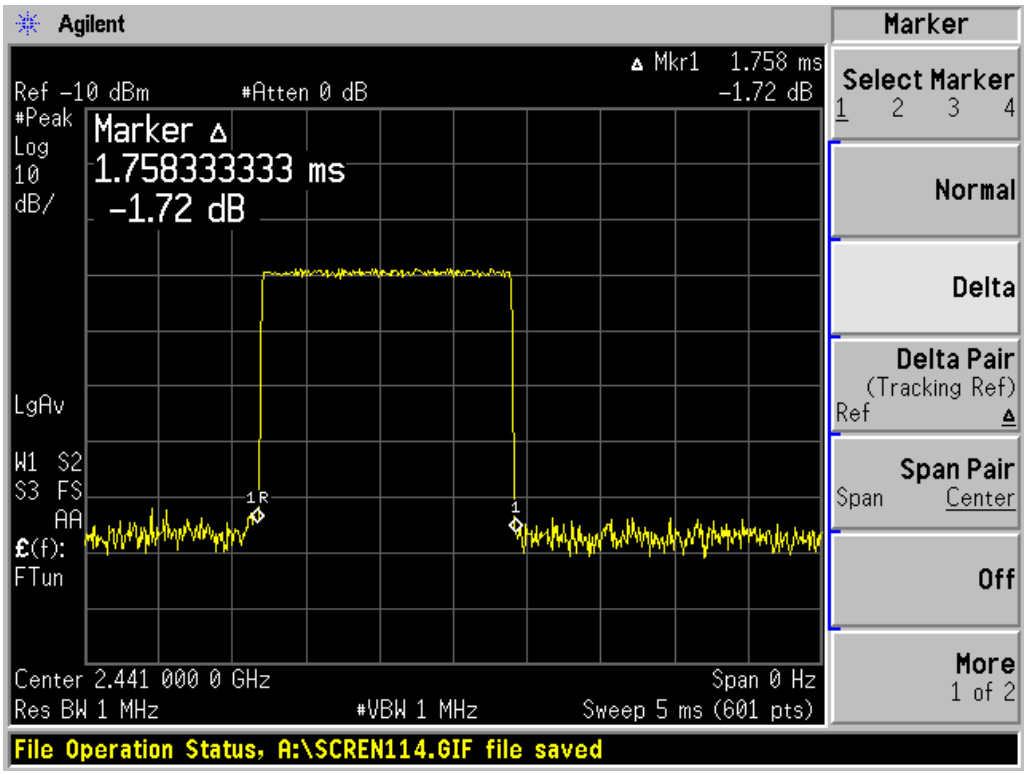
3-DH1: 50hop/5*0.4*79*0.4867ms=153.80ms



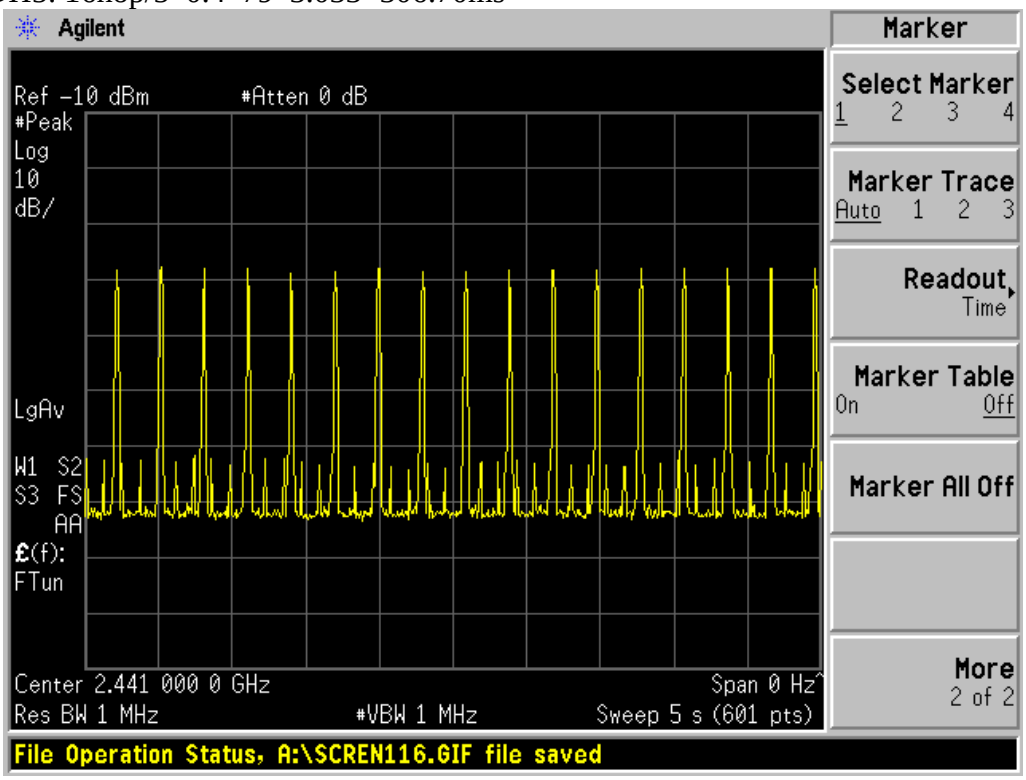


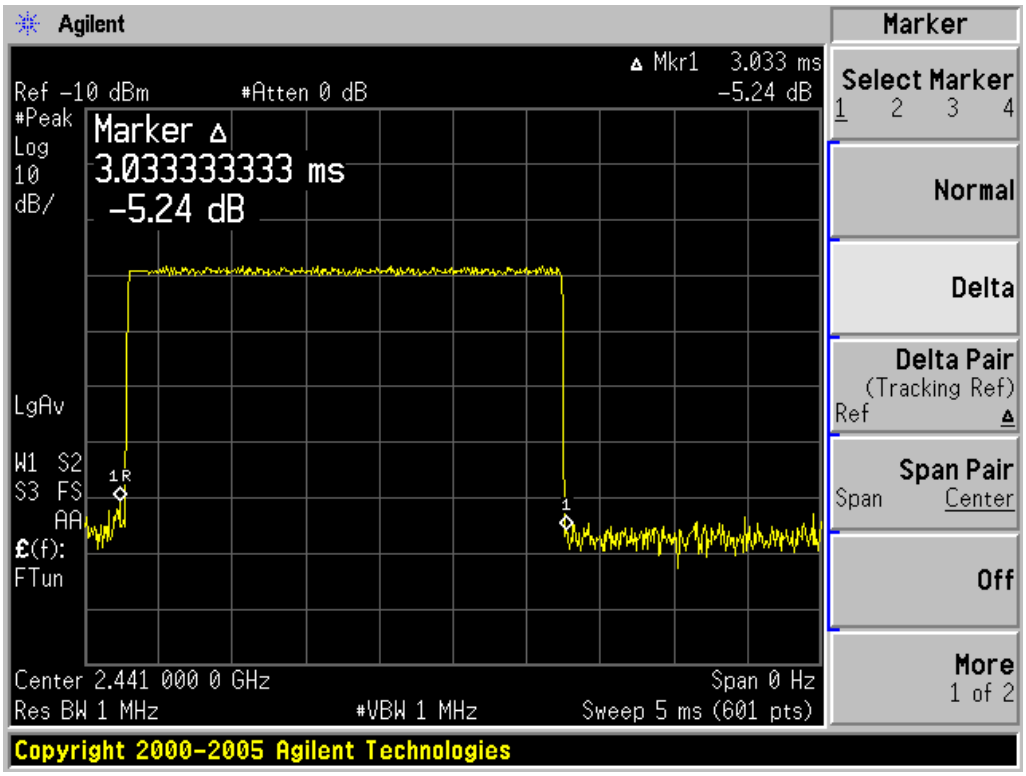
3-DH3: 25hop/5*0.4*79*1.758ms=277.76ms





3-DH5: 16hop/5*0.4*79*3.033=306.70ms





8. Radiated emissions

8.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

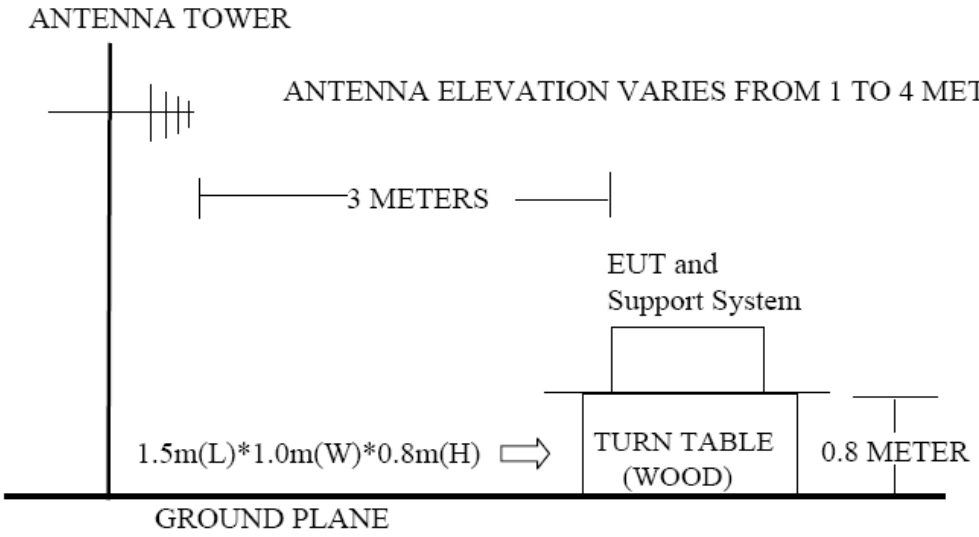
15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]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	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	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])

15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

8.2. Block Diagram of Test setup



8.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

8.4. Test Result

30MHz—1GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 3.7V									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: Tx Mode									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	41.64	11.86	13.22	0.91	/	25.99	40.00	14.01	QP
2	61.04	19.27	5.76	1.08	/	26.11	40.00	13.89	QP
3	122.15	13.41	11.74	1.42	/	26.57	43.50	16.93	QP
4	144.46	10.94	12.02	1.54	/	24.50	43.50	19.00	QP
5	180.35	12.36	9.30	1.77	/	23.43	43.50	20.07	QP
6	367.56	9.38	15.45	2.53	/	27.36	46.00	18.64	QP
Antenna Polarity: Horizontal									
1	112.15	18.45	11.74	1.42	/	31.61	43.50	11.89	QP
2	175.50	20.39	9.55	1.77	/	31.71	43.50	11.79	QP
3	199.75	17.42	10.00	1.89	/	29.31	43.50	14.19	QP
4	425.76	7.96	17.08	2.72	/	27.76	46.00	18.24	QP
5	594.54	6.59	19.60	3.23	/	29.42	46.00	16.58	QP
6	675.05	5.26	20.70	3.49	/	29.45	46.00	16.55	QP
Note: 1,Measuring frequency from 30MHz to 1GHz 2,The bandwidth of test receiver is 120KHz 3,Result = Read level + Antenna factor + cable loss 4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

30MHz—1GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 5V From PC									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: Charging									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	272.50	17.97	13.35	2.20	/	33.52	46.00	12.48	QP
2	287.05	17.59	13.34	2.28	/	33.21	46.00	12.79	QP
3	334.58	12.82	14.60	2.40	/	29.82	46.00	16.18	QP
4	599.39	6.86	19.68	3.23	/	29.77	46.00	16.23	QP
5	633.41	8.77	20.47	3.43	/	32.67	46.00	13.33	QP
6	864.20	8.88	22.82	3.96	/	35.66	46.00	10.34	QP
Antenna Polarity: Horizontal									
1	334.58	14.26	14.60	2.40	/	31.26	46.00	14.74	QP
2	499.48	11.39	18.10	2.99	/	32.48	46.00	13.52	QP
3	663.41	9.04	20.47	3.43	/	32.94	46.00	13.06	QP
4	795.33	6.76	21.80	3.76	/	32.32	46.00	13.68	QP
5	865.17	5.66	22.80	3.96	/	32.42	46.00	13.58	QP
6	930.16	5.36	23.50	4.13	/	32.99	46.00	13.01	QP

Note:

1,Measuring frequency from 30MHz to 1GHz

2,The bandwidth of test receiver is 120KHz

3,Result = Read level + Antenna factor + cable loss

4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.

1GHz—25GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 5V From PC									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: GFSK Tx CH1 2402MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2402	86.94	28.46	6.73	36.09	86.04	/	/	PK
2	4804	42.82	34.36	10.53	35.37	52.34	74.00	21.66	PK
3	4804	29.86	34.36	10.53	35.37	39.38	54.00	14.62	AV
4	7206	/							
5	9608	/							
6	12010	/							
Antenna Polarity: Horizontal									
1	2402	99.61	28.46	6.73	36.09	98.71	/	/	PK
2	4804	42.36	34.36	10.53	35.37	51.88	74.00	22.12	PK
3	4804	30.42	34.36	10.53	35.37	39.94	54.00	14.06	AV
4	7206	/							
5	9608	/							
6	12010	/							

Note:
1,Measuring frequency from 1GHz to 25GHz
2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK
2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK
3,Result = Read level + Antenna factor + cable loss-Amp factor
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.

1GHz—25GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 5V From PC									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: GFSK Tx CH40 2441MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2441	86.15	28.53	6.80	36.06	85.42	/	/	PK
2	4882	41.98	34.78	10.57	35.36	51.97	74.00	22.03	PK
3	4882	29.66	34.78	10.57	35.36	39.65	54.00	14.35	AV
4	7323	/							
5	9764	/							
6	12205	/							
Antenna Polarity: Horizontal									
1	2441	99.64	28.53	6.80	36.06	98.91	/	/	PK
2	4882	42.50	34.78	10.57	35.36	52.49	74.00	21.51	PK
3	4882	30.25	34.78	10.57	35.36	40.24	54.00	13.76	AV
4	7323	/							
5	9764	/							
6	12205	/							

Note:
1,Measuring frequency from 1GHz to 25GHz
2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK
2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK
3,Result = Read level + Antenna factor + cable loss-Amp factor
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.

1GHz—25GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 5V From PC									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: GFSK Tx CH79 2480MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480	87.02	28.58	6.87	35.97	86.50	/	/	PK
2	4960	42.74	35.29	10.59	35.37	53.25	74.00	20.75	PK
3	4960	30.42	35.29	10.59	35.37	40.93	54.00	13.07	AV
4	7440	/							
5	9920	/							
6	12400	/							
Antenna Polarity: Horizontal									
1	2480	99.21	28.58	6.87	35.97	98.69	/	/	PK
2	4960	43.06	35.29	10.59	35.37	53.57	74.00	20.43	PK
3	4960	30.57	35.29	10.59	35.37	41.08	54.00	12.92	AV
4	7440	/							
5	9920	/							
6	12400	/							
Note: 1,Measuring frequency from 1GHz to 25GHz 2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK 2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK 3,Result = Read level + Antenna factor + cable loss-Amp factor 4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

1GHz—25GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 5V From PC									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: 8-DPSK Tx CH1 2402MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2402	88.27	28.46	6.73	36.09	87.37	/	/	PK
2	4804	42.19	34.36	10.53	35.37	51.71	74.00	22.29	PK
3	4804	30.59	34.36	10.53	35.37	40.11	54.00	13.89	AV
4	7206	/							
5	9608	/							
6	12010	/							
Antenna Polarity: Horizontal									
1	2402	99.38	28.46	6.73	36.09	98.48	/	/	PK
2	4804	43.06	34.36	10.53	35.37	52.58	74.00	21.42	PK
3	4804	30.19	34.36	10.53	35.37	39.71	54.00	14.29	AV
4	7206	/							
5	9608	/							
6	12010	/							

Note:
1,Measuring frequency from 1GHz to 25GHz
2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK
2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK
3,Result = Read level + Antenna factor + cable loss-Amp factor
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.

1GHz—25GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 5V From PC									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: 8-DPSK Tx CH40 2441MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2441	87.98	28.53	6.80	36.06	87.25	/	/	PK
2	4882	41.42	34.78	10.57	35.36	51.41	74.00	22.59	PK
3	4882	30.44	34.78	10.57	35.36	40.43	54.00	13.57	AV
4	7323	/							
5	9764	/							
6	12205	/							
Antenna Polarity: Horizontal									
1	2441	99.22	28.53	6.80	36.06	98.49	/	/	PK
2	4882	42.50	34.78	10.57	35.36	52.49	74.00	21.51	PK
3	4882	30.50	34.78	10.57	35.36	40.49	54.00	13.51	AV
4	7323	/							
5	9764	/							
6	12205	/							

Note:
1,Measuring frequency from 1GHz to 25GHz
2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK
2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK
3,Result = Read level + Antenna factor + cable loss-Amp factor
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.

1GHz—25GHz Radiated emissison Test result									
EUT: Penscanner M/N:XV50									
Power:DC 5V From PC									
Test date: 2009-09-26 Test site: 3m Chamber Tested by: TaTa jiang									
Test mode: 8-DPSK Tx CH79 2480MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480	88.18	28.58	6.87	35.97	87.66	/	/	PK
2	4960	42.61	35.29	10.59	35.37	53.12	74.00	20.88	PK
3	4960	30.11	35.29	10.59	35.37	40.62	54.00	13.38	AV
4	7440	/							
5	9920	/							
6	12400	/							
Antenna Polarity: Horizontal									
1	2480	99.03	28.58	6.87	35.97	98.51	/	/	PK
2	4960	42.67	35.29	10.59	35.37	53.18	74.00	20.82	PK
3	4960	30.26	35.29	10.59	35.37	40.77	54.00	13.23	AV
4	7440	/							
5	9920	/							
6	12400	/							

Note:

1,Measuring frequency from 1GHz to 25GHz

2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK

2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK

3,Result = Read level + Antenna factor + cable loss-Amp factor

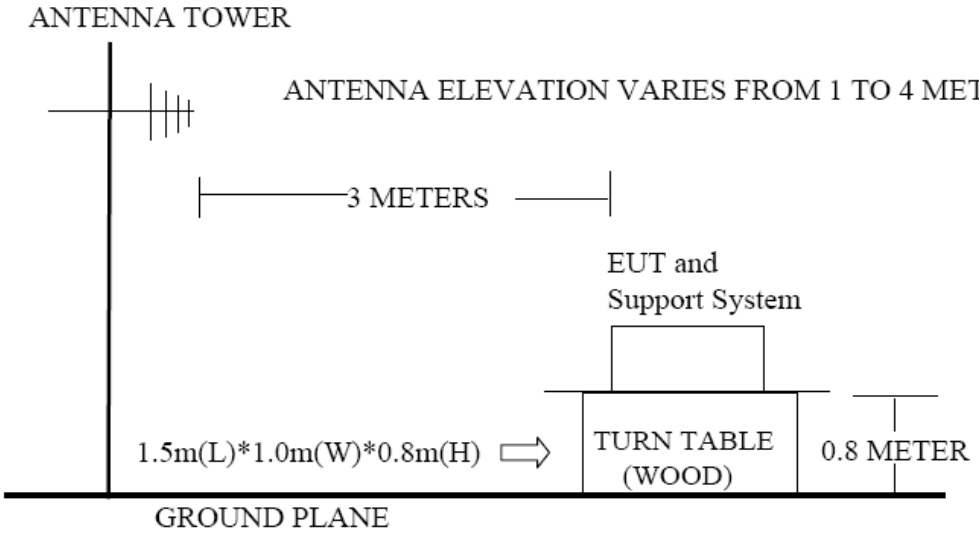
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.

9. Band Edge Compliance

9.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

9.2. Block Diagram of Test setup



9.3. Test Procedure

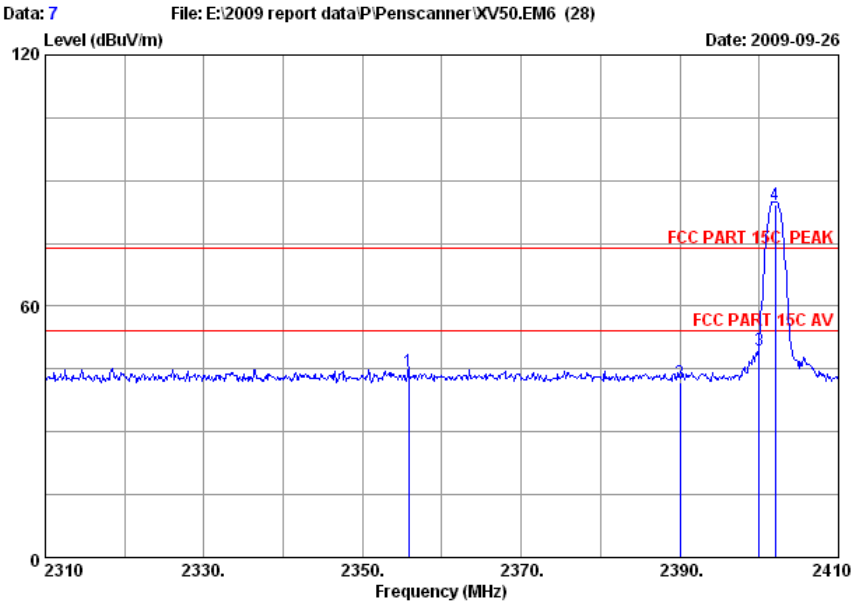
EUT was placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

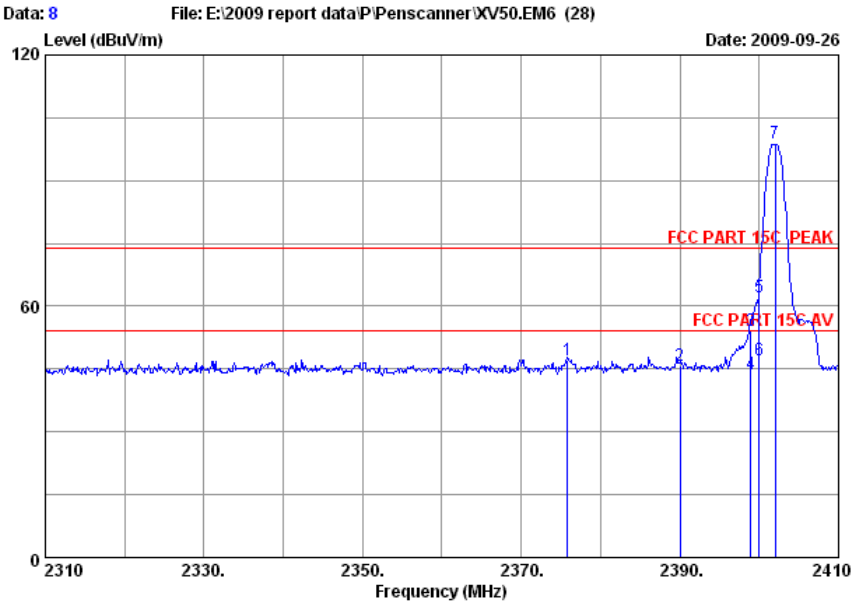
9.4. Test Result



Site no. : 3m Chamber
Data no. : 7
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK Tx 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2355.800	28.41	6.69	35.91	45.40	44.59	74.00	29.41	Peak
2	2390.000	28.46	6.71	36.09	42.77	41.85	74.00	32.15	Peak
3	2400.000	28.46	6.73	36.09	50.33	49.43	74.00	24.57	Peak
4	2402.000	28.46	6.73	36.09	84.98	84.08	74.00	-10.08	Peak

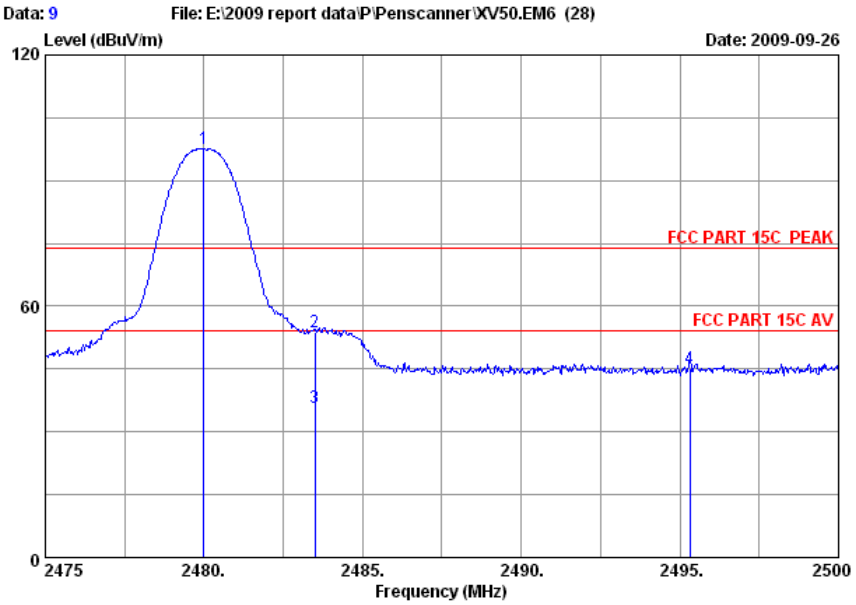
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 8
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK Tx 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2375.800	28.43	6.71	36.00	47.87	47.01	74.00	26.99	Peak
2	2390.000	28.46	6.71	36.09	46.60	45.68	74.00	28.32	Peak
3	2398.900	28.46	6.73	36.09	55.11	54.21	74.00	19.79	Peak
4	2398.900	28.46	6.73	36.09	44.73	43.83	54.00	10.17	Average
5	2400.000	28.46	6.73	36.09	63.18	62.28	74.00	11.72	Peak
6	2400.000	28.46	6.73	36.09	48.00	47.10	54.00	6.90	Average
7	2402.000	28.46	6.73	36.09	99.73	98.83	74.00	-24.83	Peak

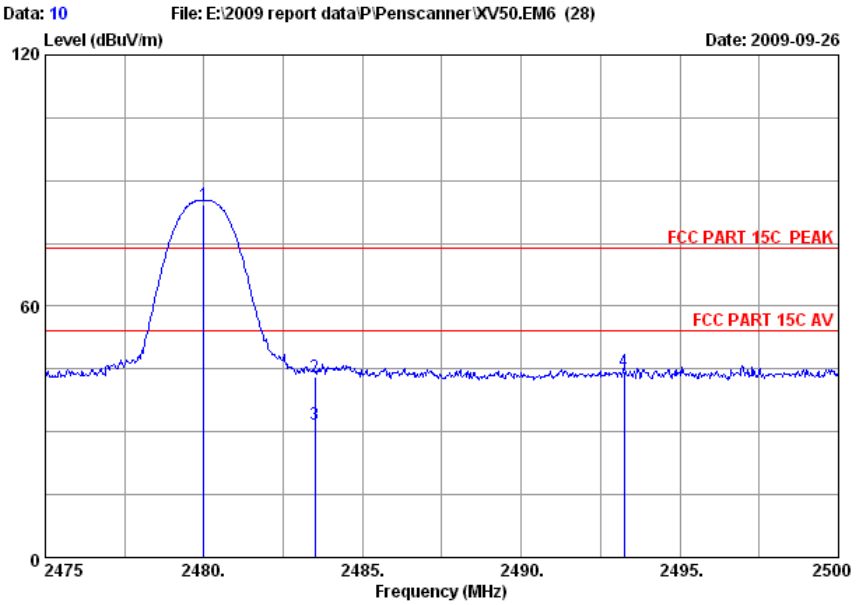
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 9
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK Tx 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.97	98.18	97.66	74.00	-23.66	Peak
2	2483.500	28.58	6.87	35.97	54.29	53.77	74.00	20.23	Peak
3	2483.500	28.58	6.87	35.97	36.27	35.75	54.00	18.25	Average
4	2495.325	28.60	6.91	36.00	45.73	45.24	74.00	28.76	Peak

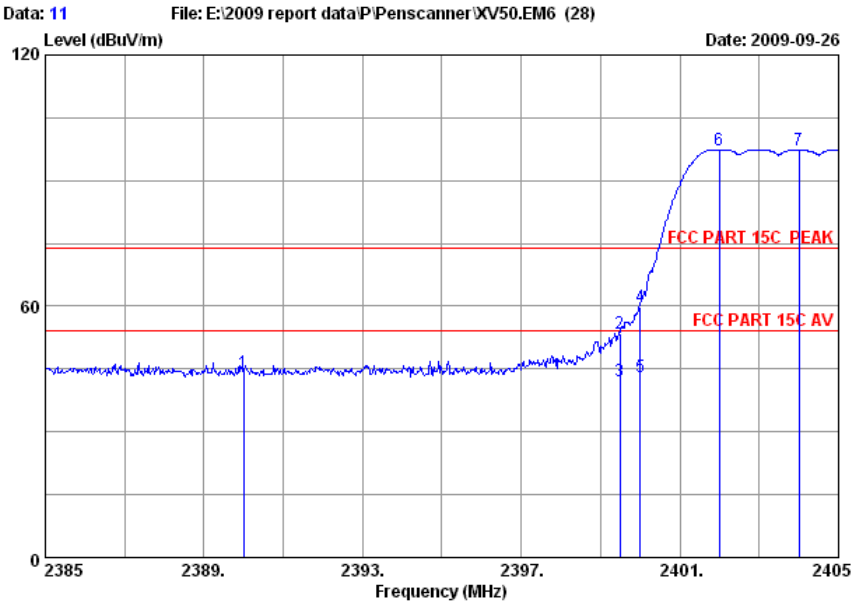
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 10
Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK Tx 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.97	84.92	84.40	74.00	-10.40	Peak
2	2483.500	28.58	6.87	35.97	43.78	43.26	74.00	30.74	Peak
3	2483.500	28.58	6.87	35.97	32.30	31.78	54.00	22.22	Average
4	2493.250	28.60	6.91	36.00	44.95	44.46	74.00	29.54	Peak

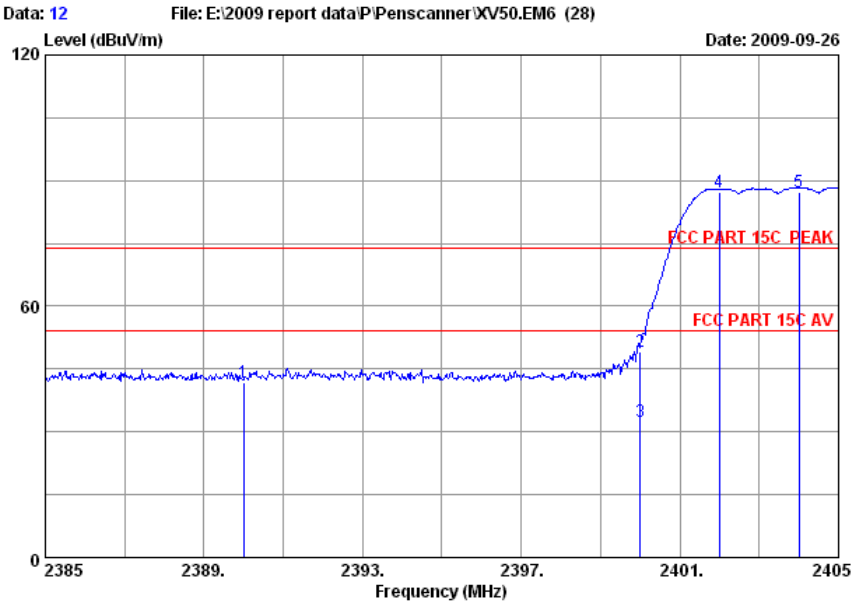
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 11
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK hopping on

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	28.46	6.71	36.09	44.91	43.99	74.00	30.01	Peak
2	2399.480	28.46	6.73	36.09	54.44	53.54	74.00	20.46	Peak
3	2399.480	28.46	6.73	36.09	43.06	42.16	54.00	11.84	Average
4	2400.000	28.46	6.73	36.09	60.76	59.86	74.00	14.14	Peak
5	2400.000	28.46	6.73	36.09	43.91	43.01	54.00	10.99	Average
6	2402.000	28.46	6.73	36.09	98.31	97.41	74.00	-23.41	Peak
7	2404.000	28.48	6.73	35.95	98.18	97.44	74.00	-23.44	Peak

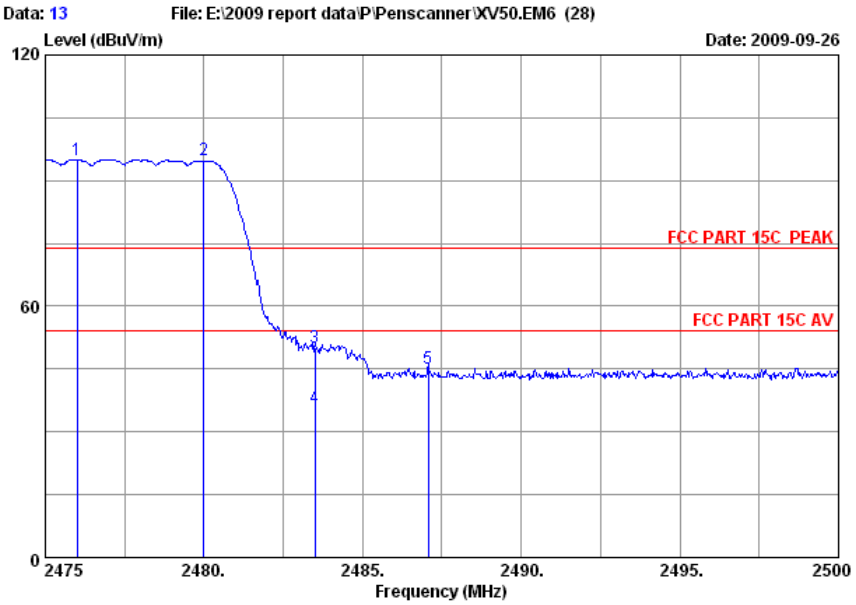
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 12
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK hopping on

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	28.46	6.71	36.09	42.55	41.63	74.00	32.37	Peak
2	2400.000	28.46	6.73	36.09	50.15	49.25	74.00	24.75	Peak
3	2400.000	28.46	6.73	36.09	33.44	32.54	54.00	21.46	Average
4	2402.000	28.46	6.73	36.09	88.02	87.12	74.00	-13.12	Peak
5	2404.000	28.48	6.73	35.95	88.12	87.38	74.00	-13.38	Peak

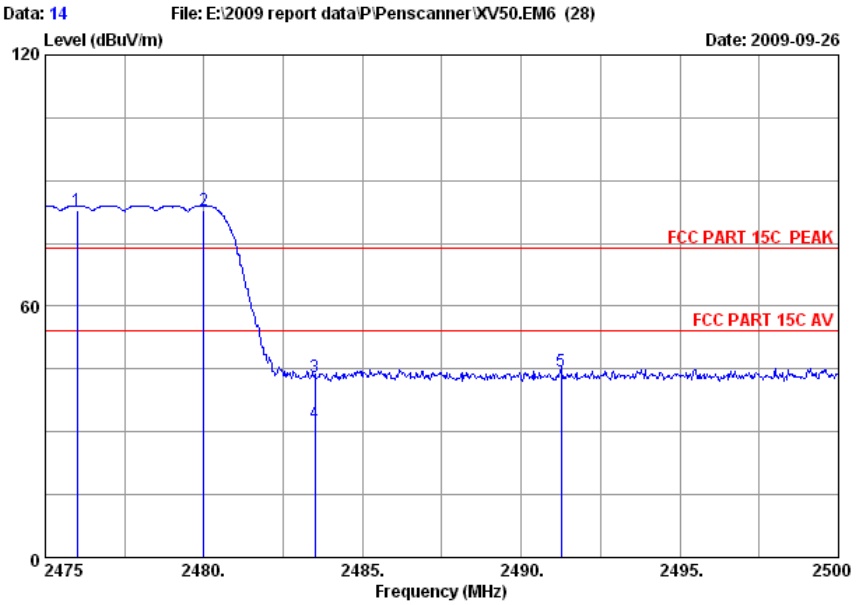
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 13
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK hopping on

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.000	28.58	6.87	35.97	95.55	95.03	74.00	-21.03	Peak
2	2480.000	28.58	6.87	35.97	95.32	94.80	74.00	-20.80	Peak
3	2483.500	28.58	6.87	35.97	50.81	50.29	74.00	23.71	Peak
4	2483.500	28.58	6.87	35.97	36.16	35.64	54.00	18.36	Average
5	2487.075	28.58	6.87	35.97	45.70	45.18	74.00	28.82	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

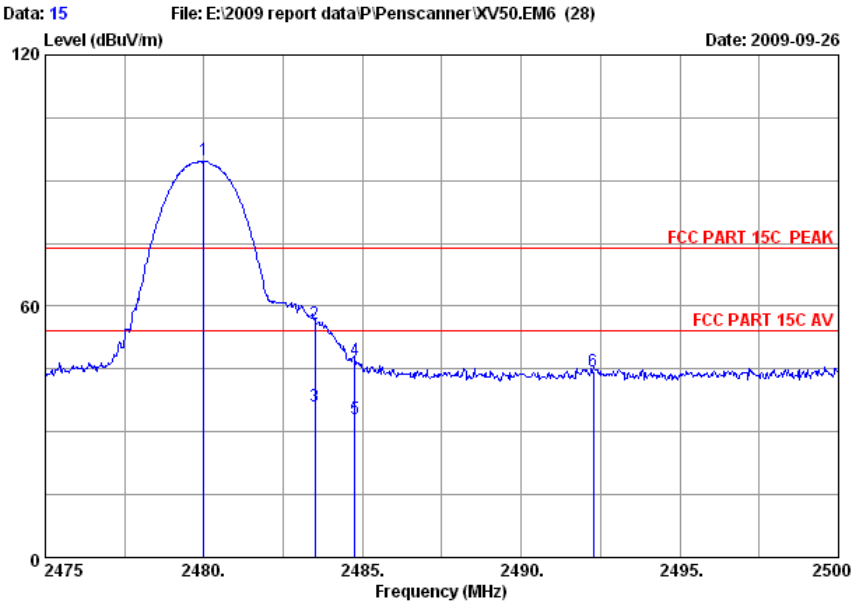


Site no. : 3m Chamber
Dis. / Ant. : 3m 3115(0905)
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : GFSK hopping on

Data no. : 14
Ant. pol. : VERTICAL
Engineer : TaTa Jiang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.000	28.58	6.87	35.97	83.52	83.00	74.00	-9.00	Peak
2	2480.000	28.58	6.87	35.97	83.47	82.95	74.00	-8.95	Peak
3	2483.500	28.58	6.87	35.97	43.54	43.02	74.00	30.98	Peak
4	2483.500	28.58	6.87	35.97	32.69	32.17	54.00	21.83	Average
5	2491.250	28.60	6.91	36.00	45.02	44.53	74.00	29.47	Peak

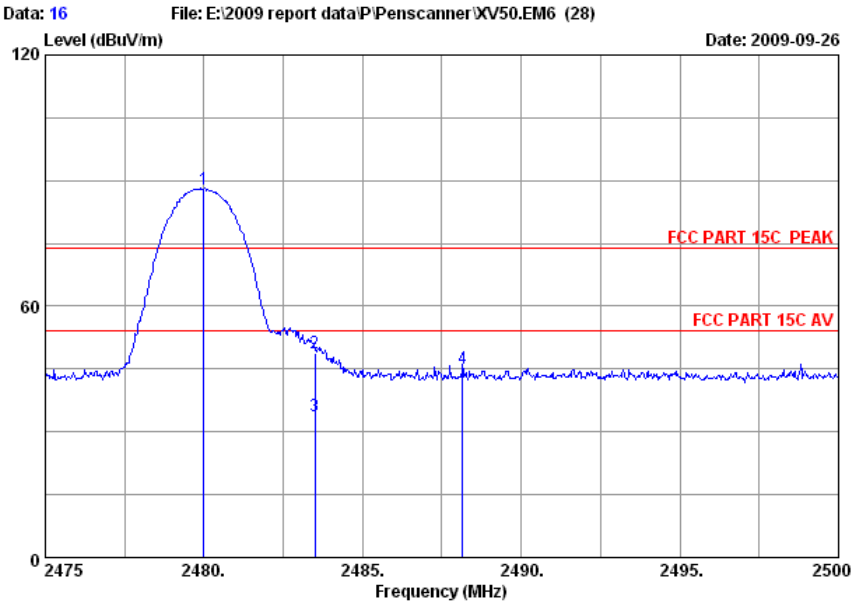
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 15
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54% Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK Tx 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.97	95.31	94.79	74.00	-20.79	Peak
2	2483.500	28.58	6.87	35.97	56.49	55.97	74.00	18.03	Peak
3	2483.500	28.58	6.87	35.97	36.46	35.94	54.00	18.06	Average
4	2484.750	28.58	6.87	35.97	47.68	47.16	74.00	26.84	Peak
5	2484.750	28.58	6.87	35.97	33.56	33.04	54.00	20.96	Average
6	2492.275	28.60	6.91	36.00	44.95	44.46	74.00	29.54	Peak

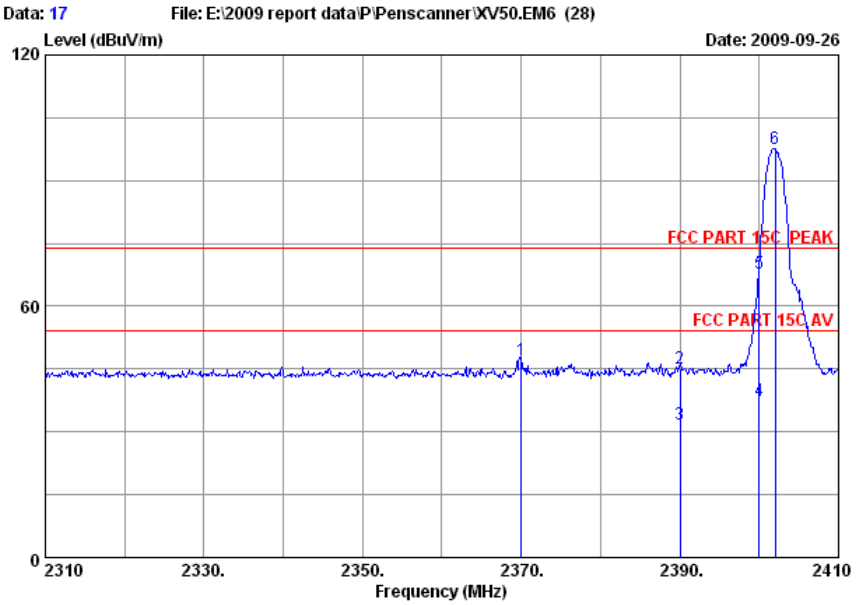
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 16
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK Tx 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.97	88.54	88.02	74.00	-14.02	Peak
2	2483.500	28.58	6.87	35.97	49.31	48.79	74.00	25.21	Peak
3	2483.500	28.58	6.87	35.97	34.36	33.84	54.00	20.16	Average
4	2488.150	28.60	6.87	36.00	45.77	45.24	74.00	28.76	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

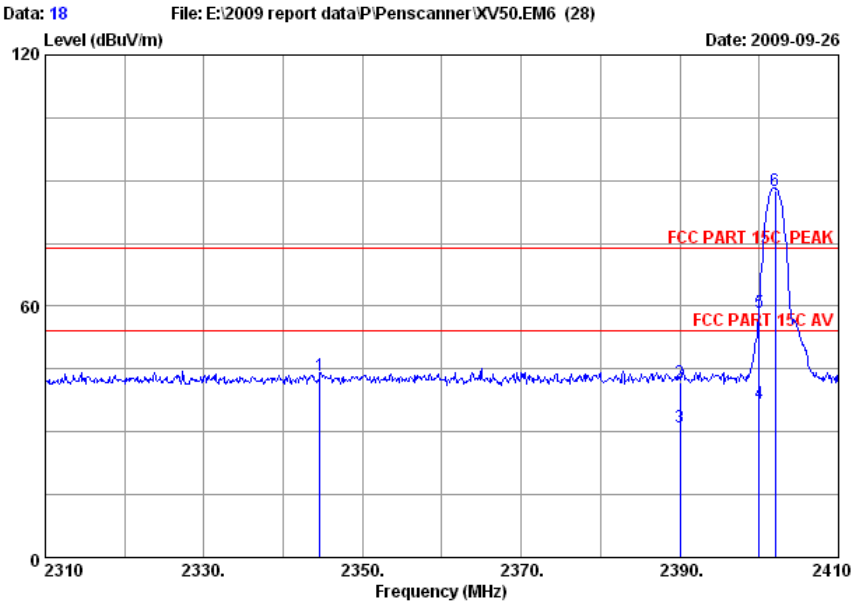


Site no. : 3m Chamber
Dis. / Ant. : 3m 3115(0905)
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK Tx 2402MHz

Data no. : 17
Ant. pol. : HORIZONTAL
Engineer : TaTa Jiang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2370.000	28.43	6.69	36.00	47.91	47.03	74.00	26.97	Peak
2	2390.000	28.46	6.71	36.09	46.14	45.22	74.00	28.78	Peak
3	2390.000	28.46	6.71	36.09	32.69	31.77	54.00	22.23	Average
4	2400.000	28.46	6.73	36.09	38.20	37.30	54.00	16.70	Average
5	2400.000	28.46	6.73	36.09	68.65	67.75	74.00	6.25	Peak
6	2402.000	28.46	6.73	36.09	98.56	97.66	74.00	-23.66	Peak

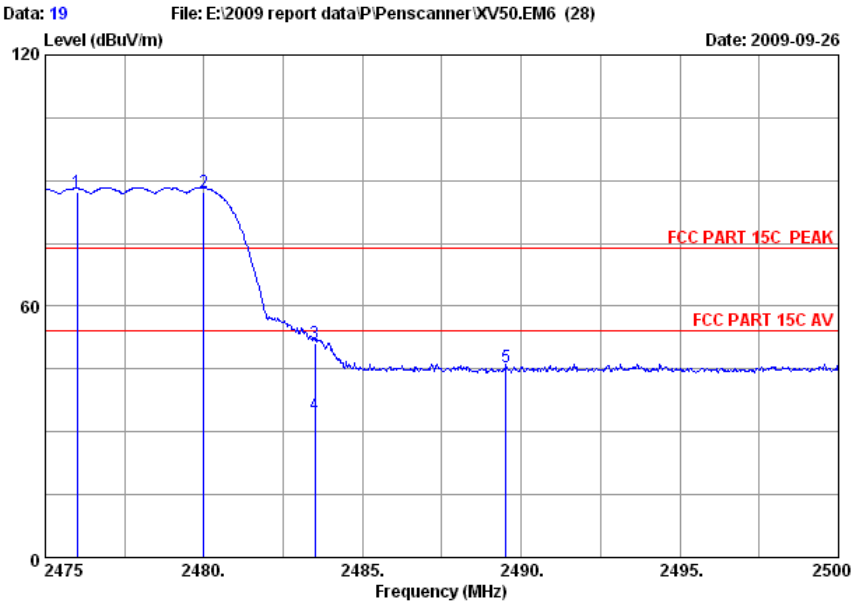
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 18
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK Tx 2402MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2344.600	28.38	6.67	35.99	44.35	43.41	74.00	30.59	Peak
2	2390.000	28.46	6.71	36.09	42.66	41.74	74.00	32.26	Peak
3	2390.000	28.46	6.71	36.09	32.01	31.09	54.00	22.91	Average
4	2400.000	28.46	6.73	36.09	37.69	36.79	54.00	17.21	Average
5	2400.000	28.46	6.73	36.09	59.54	58.64	74.00	15.36	Peak
6	2402.000	28.46	6.73	36.09	88.34	87.44	74.00	-13.44	Peak

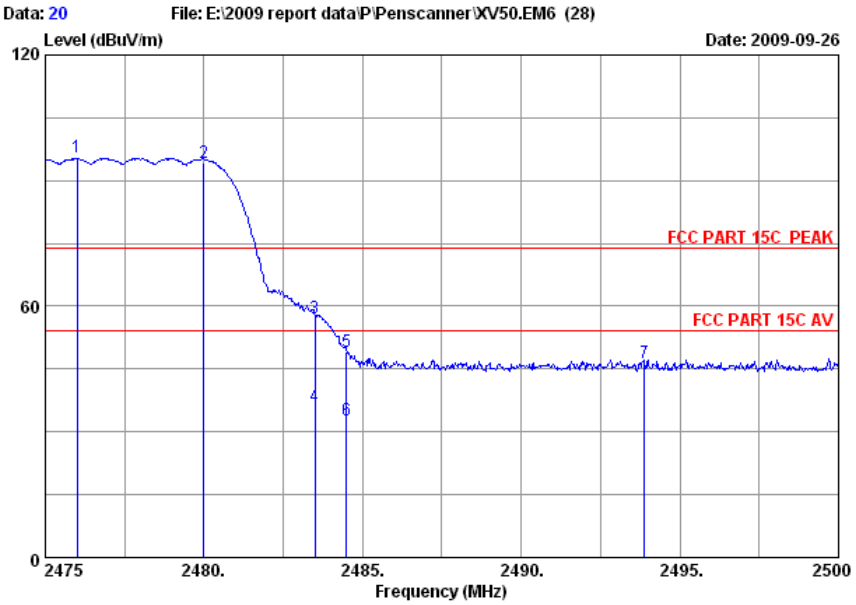
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 19
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK hopping on

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.000	28.58	6.87	35.97	87.81	87.29	74.00	-13.29	Peak
2	2480.000	28.58	6.87	35.97	87.90	87.38	74.00	-13.38	Peak
3	2483.500	28.58	6.87	35.97	51.53	51.01	74.00	22.99	Peak
4	2483.500	28.58	6.87	35.97	34.48	33.96	54.00	20.04	Average
5	2489.525	28.60	6.91	36.00	45.80	45.31	74.00	28.69	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

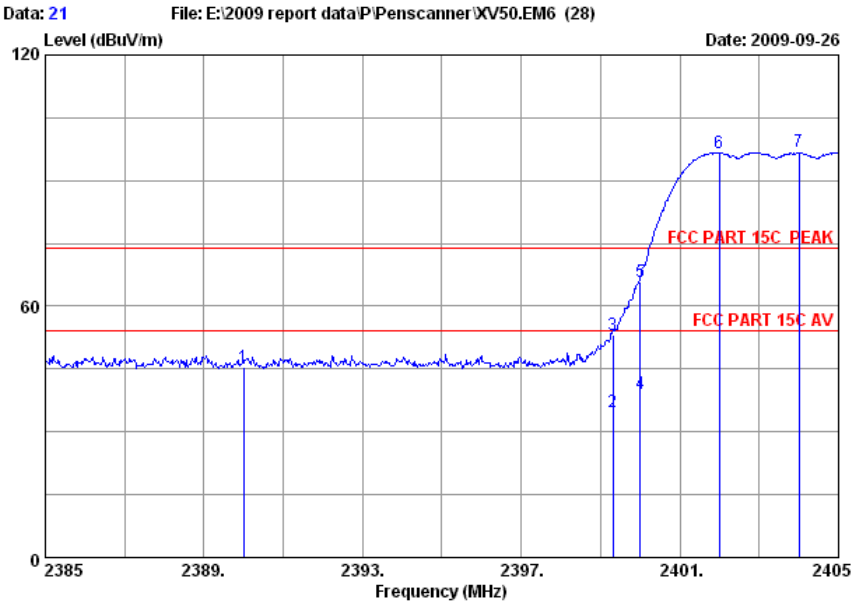


Site no. : 3m Chamber
Dis. / Ant. : 3m 3115(0905)
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK hopping on

Data no. : 20
Ant. pol. : HORIZONTAL
Engineer : TaTa Jiang

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.000	28.58	6.87	35.97	95.97	95.45	74.00	-21.45	Peak
2	2480.000	28.58	6.87	35.97	94.81	94.29	74.00	-20.29	Peak
3	2483.500	28.58	6.87	35.97	57.57	57.05	74.00	16.95	Peak
4	2483.500	28.58	6.87	35.97	36.54	36.02	54.00	17.98	Average
5	2484.500	28.58	6.87	35.97	49.64	49.12	74.00	24.88	Peak
6	2484.500	28.58	6.87	35.97	33.29	32.77	54.00	21.23	Average
7	2493.875	28.60	6.91	36.00	46.88	46.39	74.00	27.61	Peak

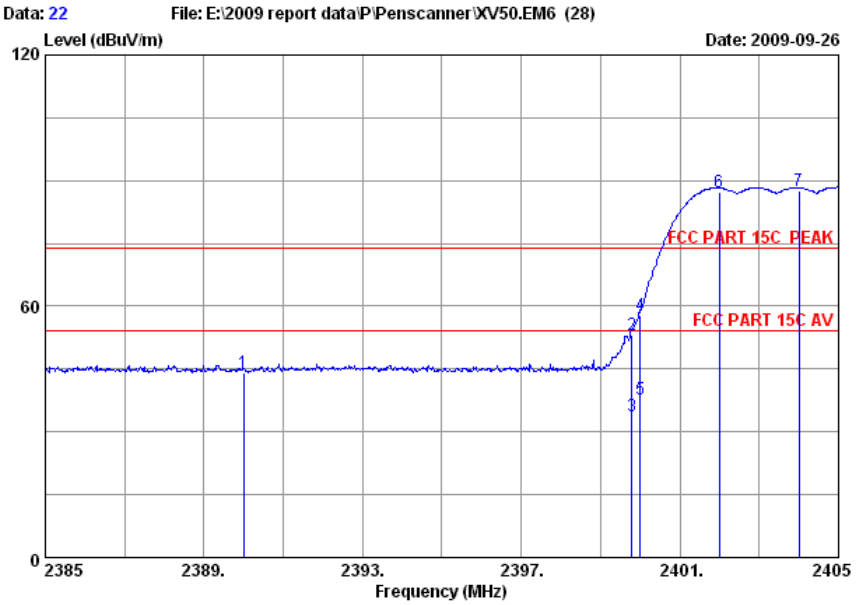
Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 21
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK hopping on

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	28.46	6.71	36.09	46.43	45.51	74.00	28.49	Peak
2	2399.320	28.46	6.73	36.09	35.59	34.69	54.00	19.31	Average
3	2399.320	28.46	6.73	36.09	54.14	53.24	74.00	20.76	Peak
4	2400.000	28.46	6.73	36.09	39.89	38.99	54.00	15.01	Average
5	2400.000	28.46	6.73	36.09	66.91	66.01	74.00	7.99	Peak
6	2402.000	28.46	6.73	36.09	97.66	96.76	74.00	-22.76	Peak
7	2404.000	28.48	6.73	35.95	97.53	96.79	74.00	-22.79	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber
Data no. : 22
Dis. / Ant. : 3m 3115(0905)
Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 23*C/54%
Engineer : TaTa Jiang
EUT : Penscanner M/N:XV50
Power : DC 3.7V
Test mode : 8-DPSK hopping on

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	28.46	6.71	36.09	45.03	44.11	74.00	29.89	Peak
2	2399.780	28.46	6.73	36.09	54.01	53.11	74.00	20.89	Peak
3	2399.780	28.46	6.73	36.09	34.67	33.77	54.00	20.23	Average
4	2400.000	28.46	6.73	36.09	58.83	57.93	74.00	16.07	Peak
5	2400.000	28.46	6.73	36.09	38.59	37.69	54.00	16.31	Average
6	2402.000	28.46	6.73	36.09	88.18	87.28	74.00	-13.28	Peak
7	2404.000	28.48	6.73	35.95	88.24	87.50	74.00	-13.50	Peak

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

10. Power Line Conducted Emissions

10.1. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

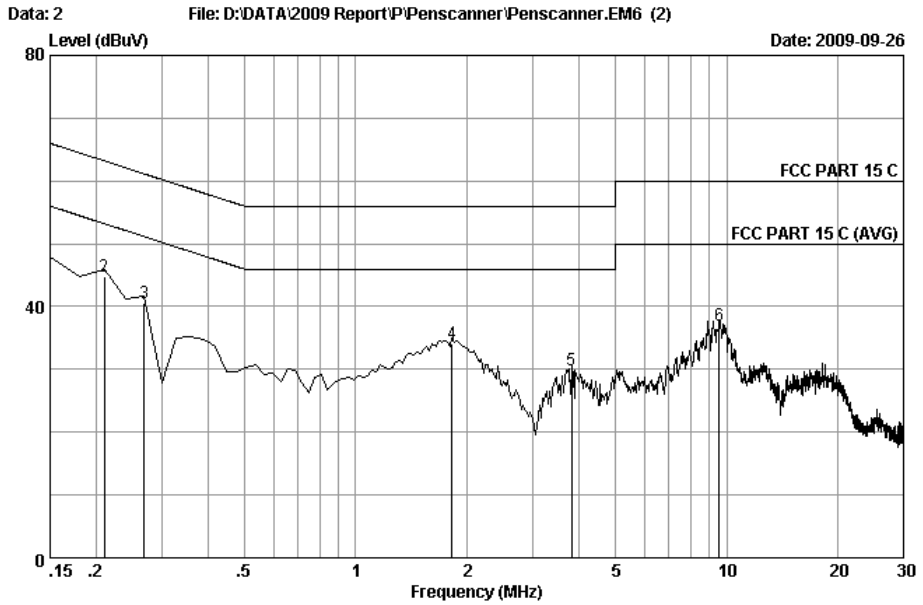
10.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT was charged form PC's USB port which connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#).. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS10) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

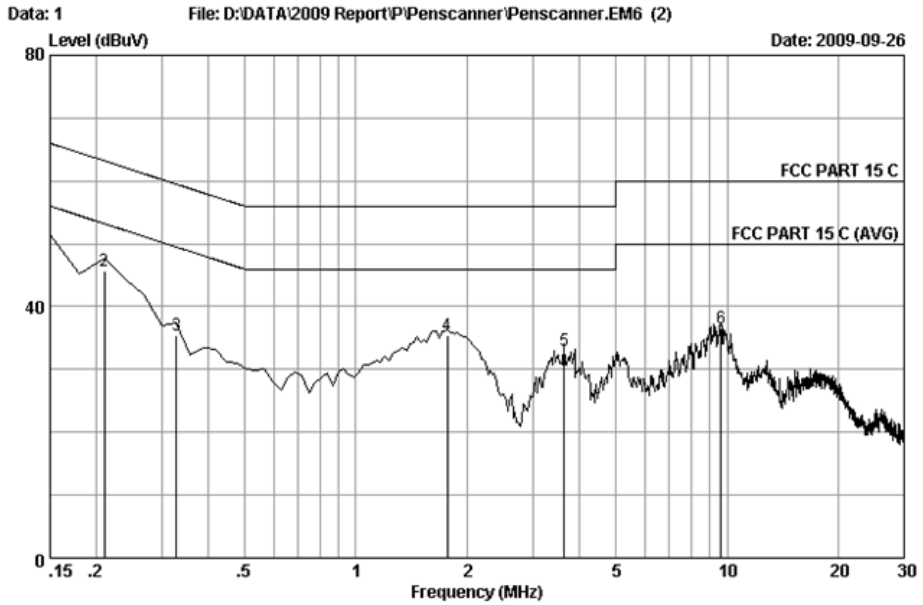
10.3.Test Result



Site no :Audix No.1 Conduction Data no :2
Dis./Ant. :** 2009 KNW407 VB LISN phase:
Limit :FCC PART 15 C
Env./Ins. :Temp:23'C Humi:54% Engineer :TaTa Jiang
EUT :Penscanner M/N:XV50
Power Rating :DC 5V From PC Input AC 120V/60Hz
Test Mode :Charging
:
:

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.49	9.88	35.57	45.94	66.00	20.06	QP
2	0.20970	0.44	9.88	34.56	44.88	63.22	18.34	QP
3	0.26940	0.42	9.88	30.29	40.59	61.14	20.55	QP
4	1.822	0.36	9.89	23.73	33.98	56.00	22.02	QP
5	3.822	0.37	9.91	19.49	29.77	56.00	26.23	QP
6	9.553	0.44	9.94	26.55	36.93	60.00	23.07	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
2.If the average limit is met when useing a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.



Site no :Audix No.1 Conduction
Dis./Ant. :** 2009 KNW407 VA
Limit :FCC PART 15 C
Env./Ins. :Temp:23'C Humi:54%
EUT :Penscanner M/N:XV50
Power Rating :DC 5V From PC Input AC 120V/60Hz
Test Mode :Charging
:
:

Data no :1
LISN phase:
Engineer :TaTa Jiang

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.47	9.88	39.21	49.56	66.00	16.44	QP
2	0.20970	0.42	9.88	35.38	45.68	63.22	17.54	QP
3	0.32910	0.37	9.89	25.16	35.42	59.47	24.05	QP
4	1.762	0.36	9.89	25.08	35.33	56.00	20.67	QP
5	3.642	0.37	9.91	22.75	33.03	56.00	22.97	QP
6	9.642	0.43	9.94	26.12	36.49	60.00	23.51	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
2.If the average limit is met when useing a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector is unnecessary.

11. Antenna Requirements

11.1. Limit

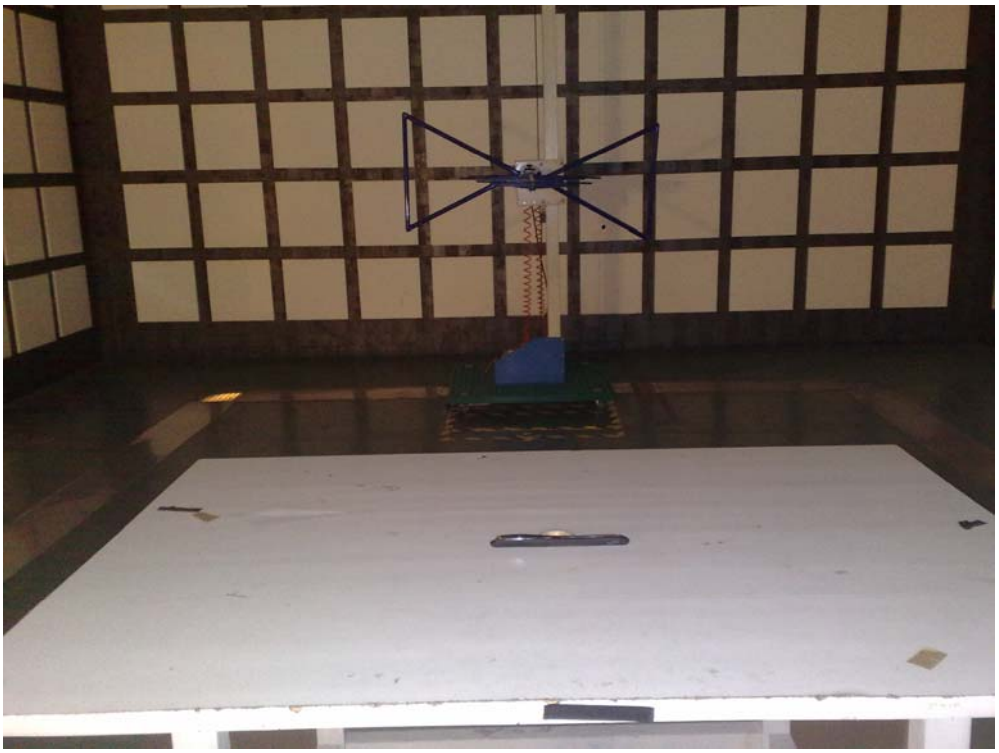
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

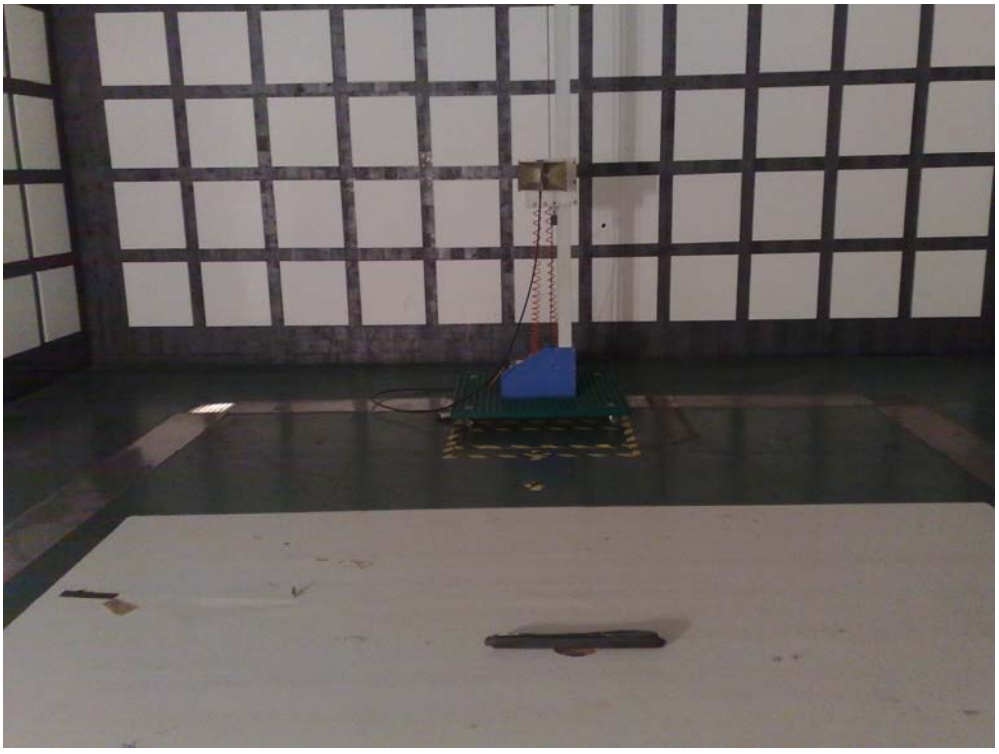
11.2. Result

The antennas used for this product are integral Patch Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 1.36dBi.

12. Testsetup photo

Tx Mode

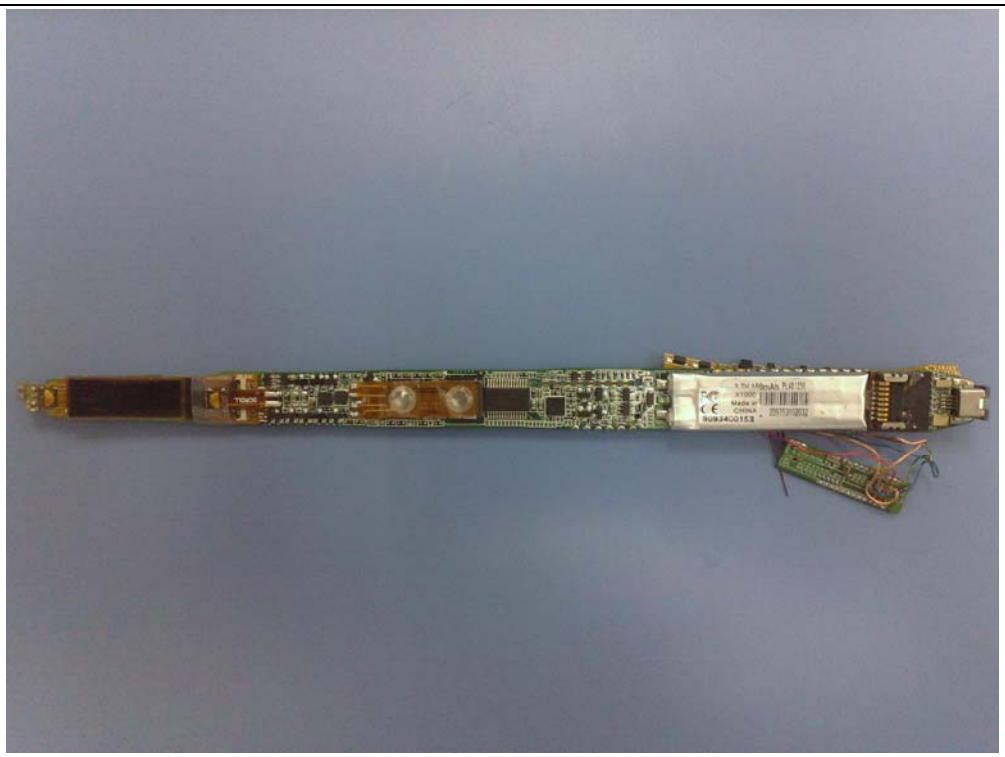


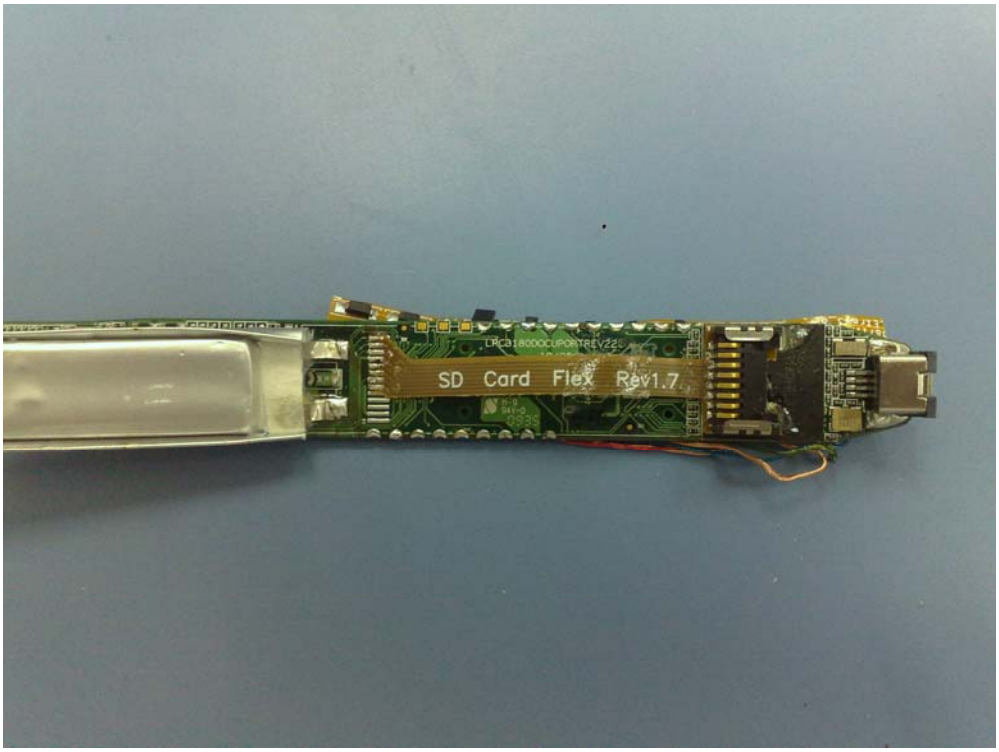


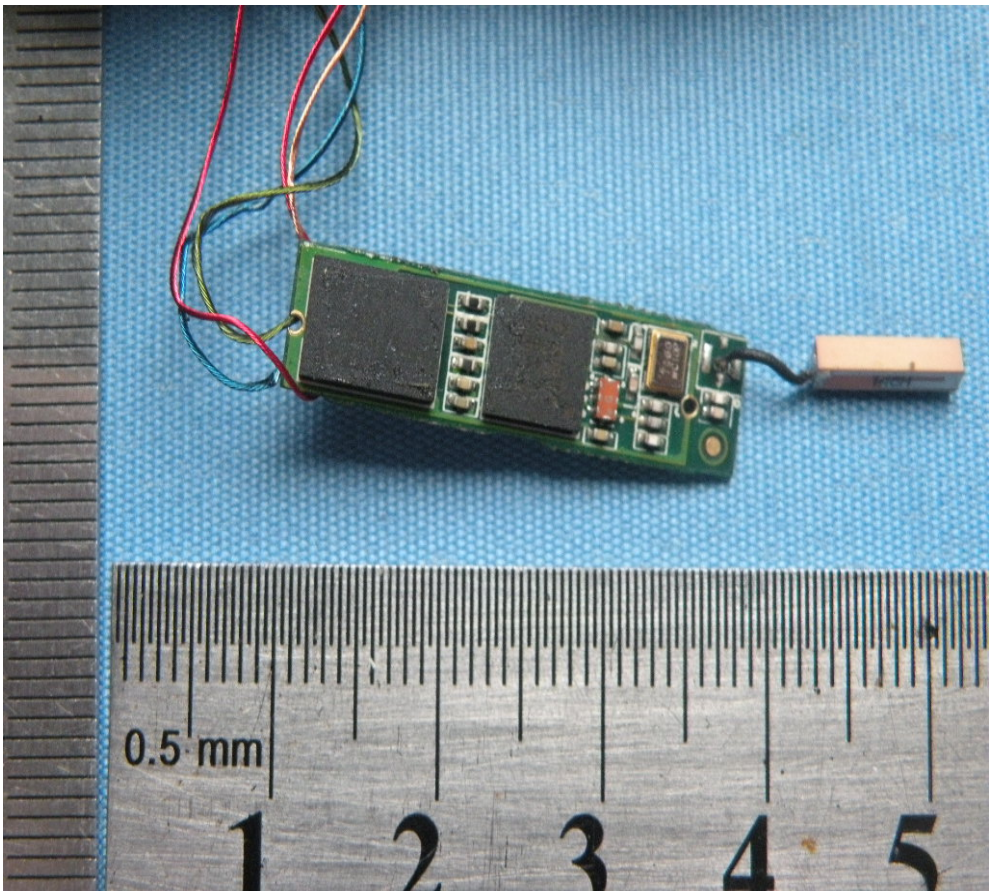
Charging Mode

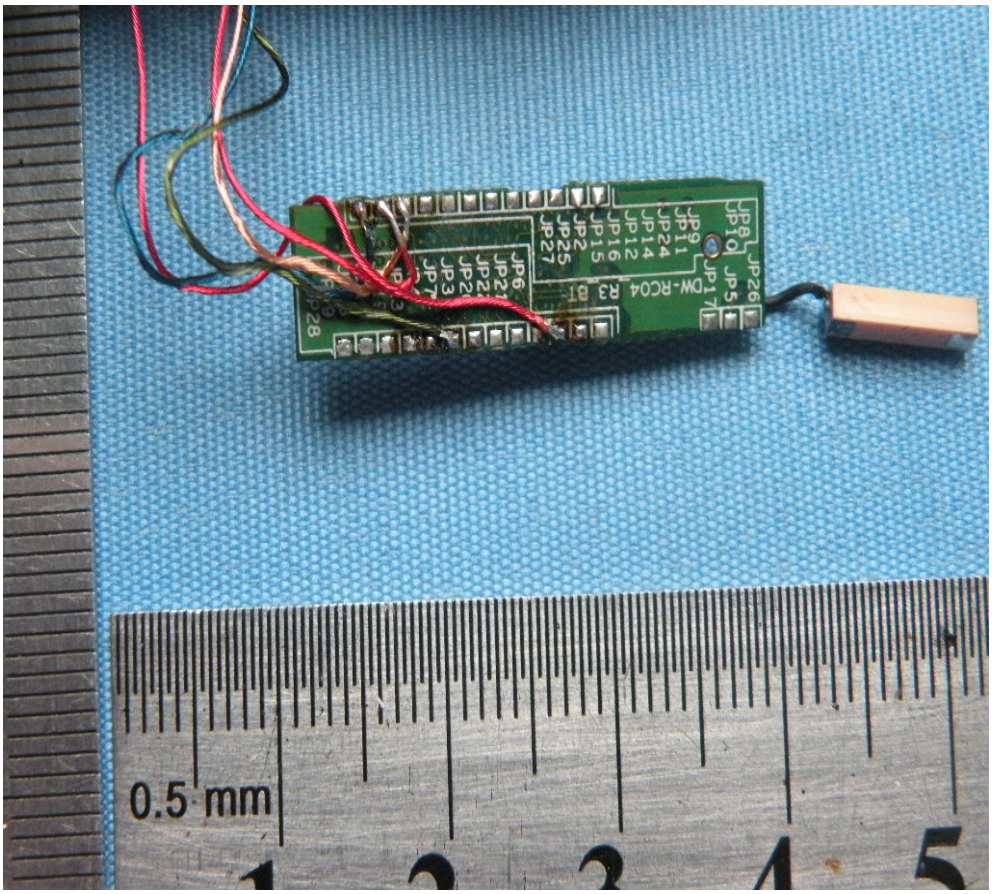
13. Photos of EUT


X1000
Made in
CHINA
9093400158




SD Card Flex Rev1.7


0.5 mm
1
2
3
4
5



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