FCC Radio Test Report

FCC ID: SIB-BGTAB-NV20A

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

Project No.	:	1407C097
Equipment	:	dreamtab
Model Name	:	BGTAB-NV20A
Applicant	:	Foxconn International Inc
Address	:	NO 2 ZIYOU ST TUCHENG DISTRICT NEW TAIPEI Taiwan 236

Date of Receipt	:	Jul. 04, 2014
Date of Test	:	Jul. 04, 2014~Jul. 25, 2014
Issued Date	:	Jul. 28, 2014
Tested by	:	BTL Inc.

Testing Engineer : David Mao
(David Mao)

Technical Manager : Leo Hung
(Leo Hung)

Authorized Signatory : Steven Lu
(Steven Lu)

BTL INC.

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Declaration

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

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BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

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

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
NEI-FCCP-1-1407C097	Original Issue.	Jul. 28, 2014

1. CERTIFICATION

Equipment	:	dreamtab
Brand Name	:	FUHU
Model Name	:	BGTAB-NV20A
Applicant	:	Foxconn International Inc
Manufacturer	:	FUHU INC.
Address	:	909N., Sepulveda Blvd., Suite 540, E1 Segundo, CA 90245
Factory	:	HONGFUJIN Precision Electronics (Chong Qing) Co., Ltd.
Address	:	No.1, 1st E District RD., Shapingba District, Chongqing 401332, P.R. China
Date of Test	:	Jul. 04, 2014~Jul. 25, 2014
Test Item	:	ENGINEERING SAMPLE
Standard(s)	:	FCC Part15, Subpart E(15.407) / ANSI C63.4 : 2009; FCC KDB 789033 D01 General UNII Test Procedures Old Rulev01r04.

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc. .
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1407C097) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Test result included in this report is only for the5150MHz~5250MHz;5250MHz~5350MHz; 5470~5725MHz Mode part of the product.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart E			
Standard(s) Section	Test Item	Judgment	Remark
15.207	AC Power Line Conducted Emissions	PASS	
15.407(a)	26dB Spectrum Bandwidth	PASS	
15.407(a)	Maximum Conducted Output Power	PASS	
15.407(a)	Power Spectral Density	PASS	
15.407(a)	Radiated Emissions	PASS	
15.407(b)	Band Edge Emissions	PASS	
15.407(g)	Frequency Stability	PASS	
15.203	Antenna Requirements	PASS	

NOTE:

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

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792
BTL's test firm number for FCC: 319330

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ±**U**，where expended uncertainty **U** is based on astandard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95**%。

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
DG-C02	CISPR	150 KHz~30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz~200MHz	V	3.82	
		30MHz~200MHz	H	3.60	
		200MHz~ 1,000MHz	V	3.86	
		200MHz~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	dreamtab	
Brand Name	FUHU	
Model Name	BGTAB-NV20A	
Mode Different	N/A	
Product Description	Operation Frequency	Band 1:5150MHz~5250MHz Band 2:5250MHz~5350MHz Band 3:5470MHz~5725MHz
	Modulation Type	OFDM
	Bit Rate of Transmitter	11a:6/ 9/12/18/24/36/48/54Mbps 11n:300Mbps
	Output Power (Max.)- Band 1	802.11a:13.82dBm 802.11n (20M): 15.66dBm 802.11n (40M): 15.25dBm
	Output Power (Max.)- Band 2	802.11a:13.65dBm 802.11n (20M): 15.56dBm 802.11n (40M): 15.14dBm
	Output Power (Max.)- Band 3	802.11a:13.50dBm 802.11n (20M): 15.45dBm 802.11n (40M): 15.42dBm
	More details of EUT technical specification, please refer to the User's Manual.	
Power Source	#1 DC supplied from AC Adapter. Model: ADS-65LSI-19-3 19065G #2 Supplied from rechargeable Li-ion polymer battery. Brand / Model: McNair / MLP2462113-4S	
Power Rating	#1 I/P AC 100-240V~ 50/60Hz 1.5A O/P: DC 19V 3.42A #2 DC14.8V 1650mAh 24.42Wh	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

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

2. Channel List:

802.11a / 802.11n 20M							
Band 1		Band 2		Band 3			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	52	5260	100	5500	116	5580
40	5200	56	5280	104	5520	132	5660
44	5220	60	5300	108	5540	136	5680
48	5240	64	5320	112	5560	140	5700

802.11n 40M							
Band 1		Band 2		Band 3			
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	54	5270	102	5510	118	5590
46	5230	62	5310	110	5550	126	5630
						134	5670

3. Antenna Specification:

The product has 2 group antenna: MAG Corporation and FOXCONN .

Group 1

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	FOXCONN	PCA-3007-25GC1-A3	PIFA	N/A	2.35	320mm
2	FOXCONN	PCA-3007-25GC1-A4	PIFA	N/A	1.82	600mm

Group 2

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	MAG Corporation	PCA-3007-25GC1-A3	PIFA	N/A	2.80	320mm
2	MAG Corporation	PCA-3007-25GC1-A4	PIFA	N/A	-2.45	600mm

3.2 DESCRIPTION OF TEST MODES

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

Pretest Test Mode	Description
Mode 1	TX A Mode/ CH36, CH40, CH48(Band 1) TX A Mode/ CH52, CH60, CH64(Band 2) TX A Mode/ CH100, CH116, CH140(Band 3)
Mode 2	TX N20 Mode/ CH36, CH40, CH48(Band 1) TX N20 Mode/ CH52, CH60, CH64(Band 2) TX N20 Mode/ CH100, CH116, CH140(Band 3)
Mode 3	TX N40 Mode/ CH38, CH46 (Band 1) TX N40 Mode/ CH54, CH62 (Band 2) TX N40 Mode/CH102, CH110, CH134(Band 3)
Mode 4	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode	Description
Mode 4	TX Mode

Note: For Conducted test, the Dipole antennawith external cableis found to be the worst case and recorded.

For Radiated Test	
Final Test Mode	Description
Mode 1	TX A Mode/ CH36, CH40, CH48(Band 1) TX A Mode/ CH52, CH60, CH64(Band 2) TX A Mode/ CH100, CH116, CH140(Band 3)
Mode 2	TX N20 Mode/ CH36, CH40, CH48(Band 1) TX N20 Mode/ CH52, CH60, CH64(Band 2) TX N20 Mode/ CH100, CH116, CH140(Band 3)
Mode 3	TX N40 Mode/ CH38, CH46 (Band 1) TX N40 Mode/ CH54, CH62 (Band 2) TX N40 Mode/CH102, CH110, CH134(Band 3)

Note: (1)For Radiated Below 1G test, the 802.11a mode is found to be the worst case and recorded.

(2) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis. The worst case was found positioned on Z-plane. Therefore only the test data of this Z-plane was used for radiated emission measurement test.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

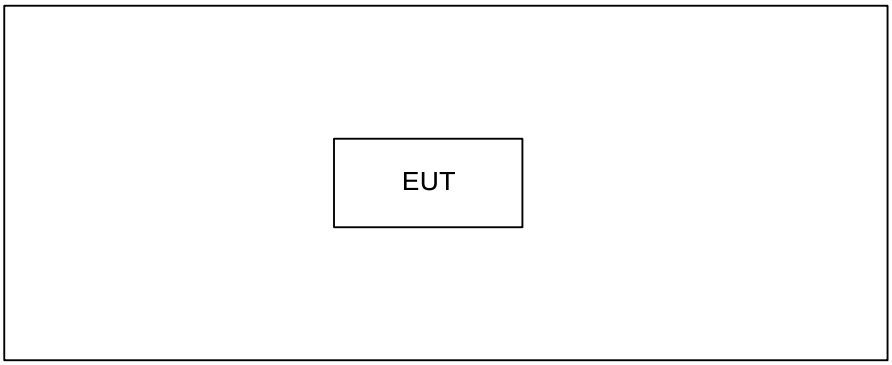
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product

Test software version	N/A		
Frequency	**5180 MHz**	**5200MHz**	**5240 MHz**
A Mode	14	14	14
Frequency	**5260 MHz**	**5300 MHz**	**5320 MHz**
A Mode	14	14	14
Frequency	**5500 MHz**	**5580 MHz**	**5700 MHz**
A Mode	13	14	14

Test software version	N/A		
Frequency	**5180 MHz**	**5200MHz**	**5240 MHz**
N20 Mode	13	13	13
Frequency	**5260 MHz**	**5300 MHz**	**5320 MHz**
N20 Mode	13	13	13
Frequency	**5500 MHz**	**5580 MHz**	**5700 MHz**
N20 Mode	12	13	13

Test software version	N/A		
Frequency	**5190MHz**	**5230MHz**	
N40 Mode	13	13	
Frequency	**5270 MHz**	**5310 MHz**	
N40 Mode	13	13	
Frequency	**5510 MHz**	**5550 MHz**	**5670 MHz**
N40M Mode	12	13	14

3.4BLOCKDIAGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED



3.5DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
-	-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

4.EMC EMISSION TEST

4.1CONDUCTED EMISSION MEASUREMENT

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

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

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipmentspowered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the groundplane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

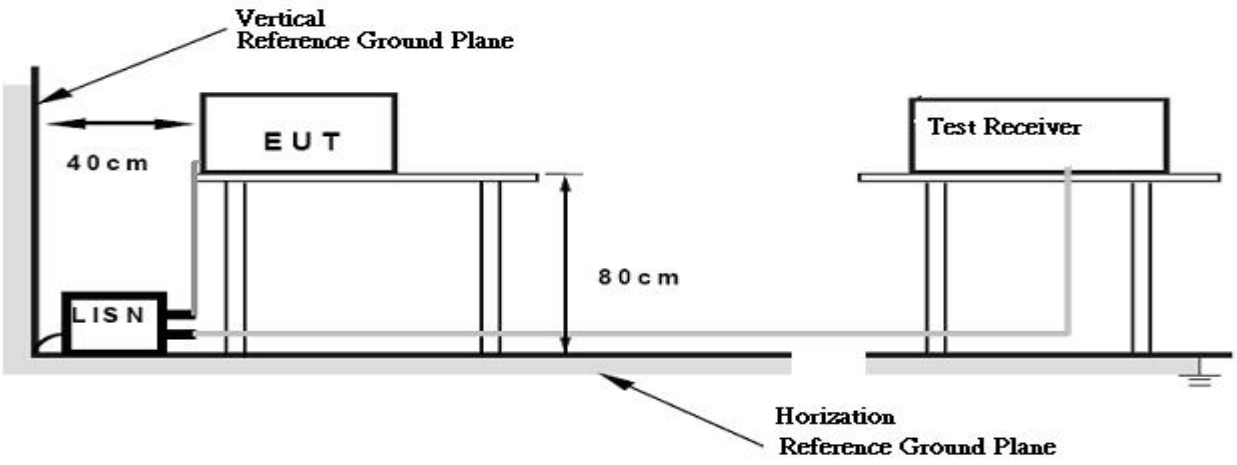
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3DEVIATIONFROMTESTSTANDARD

No deviation

4.1.4 TESTSETUP



4.1.5EUT OPERATING CONDITIONS

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

4.1.6EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC14.8V

4.1.7TEST RESULTS

Please refer to the Attachment A.

Remark:

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

(2) Measuring frequency range from 150KHz to 30MHz。

4.2 RADIATED EMISSION MEASUREMENT

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

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) and RSS-210 section 2.2&A8.5, then the 15.209(a) and RSS-Gen limit in the table below has to be followed.

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

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27	68.3
	-17	78.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

4.2.2 TESTPROCEDURE

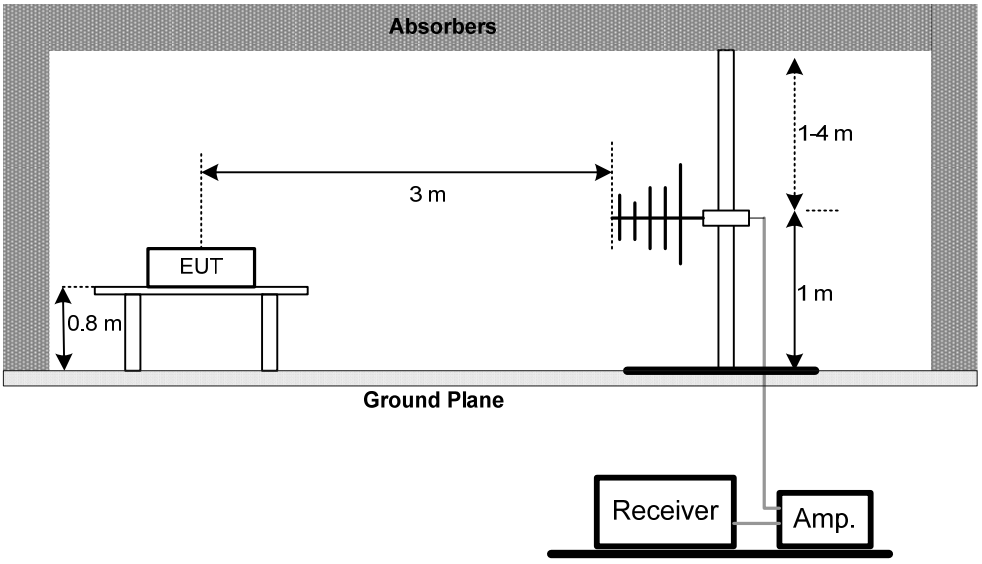
a. The measuring distance of at 1.5m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3DEVIATIONFROMTESTSTANDARD

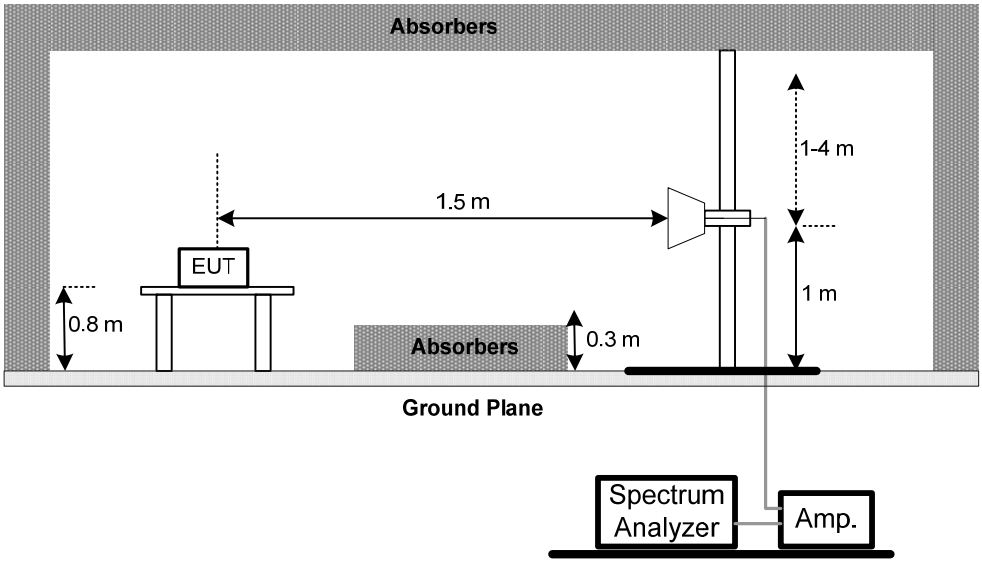
No deviation

4.2.4 TESTSETUP

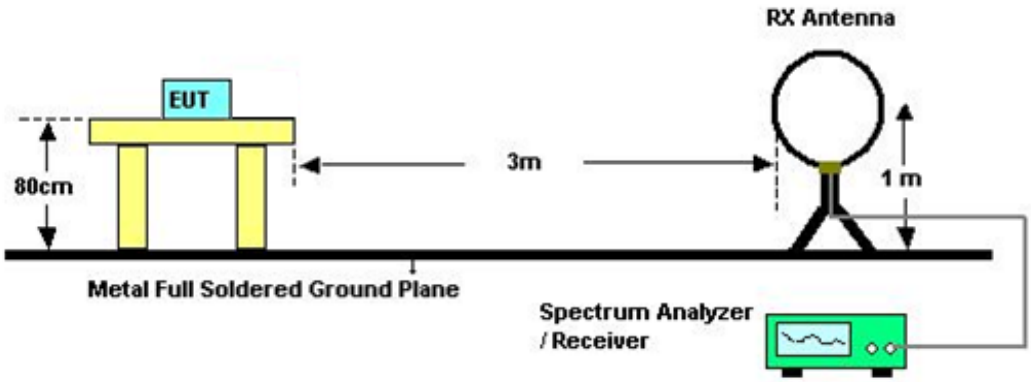
Radiated Emission Test Set-Up Frequency30 - 1000MHz



Radiated Emission Test Set-Up Frequency Above 1 GHz



Radiated emissions below 30MHz



4.2.5EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6**Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.6EUT TEST CONDITIONS

Temperature: 25°CRelative Humidity: 55%Test Voltage: DC14.8V

4.2.7 TEST RESULTS (9K TO 30MHz)

Please refer to the Attachment B

4.2.8 TEST RESULTS(BETWEEN30 TO 1000 MHz)

Please refer to the Attachment C.

Remark:

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Modewith Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz。

(2) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(3) Measuring frequency range from 30MHz to 1000MHz。

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table。

4.2.9 TEST RESULTS(ABOVE1000 MHz)

Please refer to the Attachment D.

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

(2) All readings are Peak unless otherwise stated AV in column of『Note』. Peak denotes that the Peak reading compliance with the AV Limits and then AV Mode measurement didn't perform.

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axes:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1GHz it is taken care of that the EUT is always within the 3dB cone of radiation BW of the used antenna.

5.26dB SPECTRUM BANDWIDTH

5.1APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
26 dB Bandwidth	------	5150MHz~5250 5250MHz~5350 5470MHz~5725	PASS

5.1.1TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b.

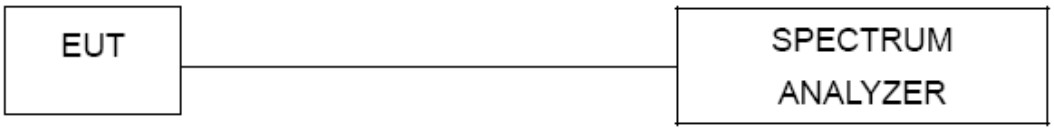
Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	300 kHz
VB	1000 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

c. Measured the spectrum width with power higher than 26dB below carrier

5.1.2DEVIATION FROM STANDARD

No deviation.

5.1.3TEST SETUP



5.1.4EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5EUT TEST CONDITIONS

Temperature: 25°CRelative Humidity: 55%Test Voltage: DC14.8V

5.1.6TEST RESULTS

Please refer to the Attachment E.

6.MAXIMUM CONDUCTED OUTPUT POWER

6.1APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Frequency Range (MHz)	Limit	Result
Conducted Output Power	5150 - 5250	not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B (FCC Part15, Subpart E)	PASS
	5250 - 5350	not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B	PASS
	5470 - 5725	not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B	PASS

Note: where "B" is the 26dB emissions bandwidth in MHz.

6.1.1TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b.

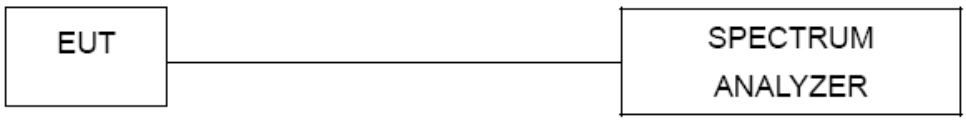
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) ofthe signal
RBW	= 1 MHz.
VBW	≥ 3 MHz.
Detector	RMS
Trace	Max Hold
Sweep Time	auto

b. Test was performed in accordance with method of KDB 789033 D01.

6.1.2DEVIATION FROM STANDARD

No deviation.

6.1.3TEST SETUP



6.1.4EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5EUT TEST CONDITIONS

Temperature: 25°CRelative Humidity: 55%Test Voltage: DC14.8V

6.1.6TEST RESULTS

Please refer to the Attachment F.

7.ANTENNA CONDUCTED SPURIOUS EMISSION

7.1APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Antenna conducted Spurious Emission	-27 dBm/1MHz	5150 – 5250 5250 – 5350 5470–5725	PASS

7.1.1TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

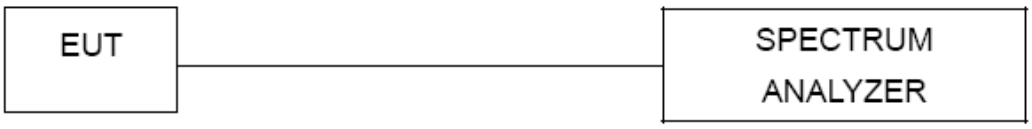
b.

Spectrum Parameter	Setting
Attenuation	Auto
RB	1000kHz
VB	1000kHz
Trace	Max Hold
Sweep Time	Auto

7.1.2DEVIATION FROM STANDARD

No deviation.

7.1.3TEST SETUP



7.1.4EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5EUT TEST CONDITIONS

Temperature: 25°CRelative Humidity: 55%Test Voltage: DC14.8V

7.1.6TEST RESULTS

Please refer to the Attachment G.

8.POWER SPECTRAL DENSITY TEST

8.1APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Power Spectral Density	4dBm	5150 - 5250	PASS
	11 dBm	5250 - 5350	PASS
	11 dBm	5470 - 5725	PASS

8.1.1TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

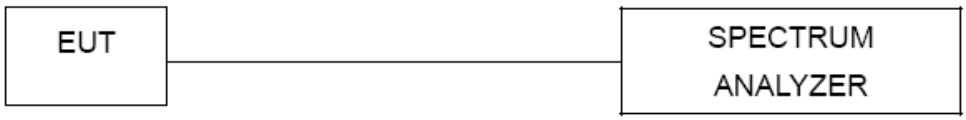
b.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) ofthe signal
RB	= 1 MHz.
VB	≥ 3 MHz.
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

8.1.2DEVIATION FROM STANDARD

No deviation.

8.1.3TEST SETUP



8.1.4EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.5EUT TEST CONDITIONS

Temperature: 25°CRelative Humidity: 55%Test Voltage: DC14.8V

8.1.6TEST RESULTS

Please refer to the Attachment H.

9.FREQUENCY STABILITY MEASUREMENT

9.1APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E 15.407(g)			
Test Item	Limit	Frequency Range (MHz)	Result
Frequency Stability	specifiedin the user's manual	5150 – 5250	PASS
		5250 – 5350	PASS
		5470 – 5725	PASS

9.1.1TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissionsbandwidth
RB	10 kHz
VB	10kHz
Sweep Time	Auto

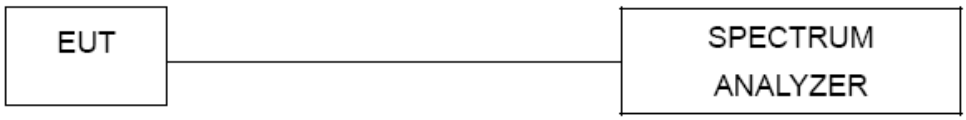
c. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

d. user manual temperature is0°C~50°C.

9.1.2DEVIATION FROM STANDARD

No deviation.

9.1.3TEST SETUP



9.1.4EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

9.1.5EUT TEST CONDITIONS

Temperature: 25°CRelative Humidity: 55%Test Voltage: DC14.8V

9.1.6TEST RESULTS

Please refer to the Attachment I.

10. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Mar. 29,2015
2	LISN	R&S	ENV216	100087	Mar. 29,2015
3	Test Cable	N/A	C_17	N/A	Mar. 14, 2015
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	Mar. 29,2015
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Mar. 29,2015

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 29,2015
2	Amplifier	HP	8447D	2944A09673	Mar. 29,2015
3	Test Receiver	R&S	ESCI	100382	Mar. 29,2015
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 01, 2015
5	Antenna	ETS	3115	00075789	Mar. 29,2015
6	Amplifier	Agilent	8449B	3008A02274	Mar. 29,2015
7	Spectrum	Agilent	E4408B	US39240143	Nov. 09, 2014
8	Test Cable	HUBER+SUHNER	C-45	N/A	Mar. 29,2015
9	Controller	CT	SC100	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	Mar. 29,2015
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Mar. 29,2015
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Feb. 22, 2015

26dB Spectrum BandwidthMeasurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Maximum Conducted Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014

Frequency StabilityMeasurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 11, 2014
2	Precision Oven Tester	HOLINK	H-T-1F-D	BA03101701	May. 25, 2014

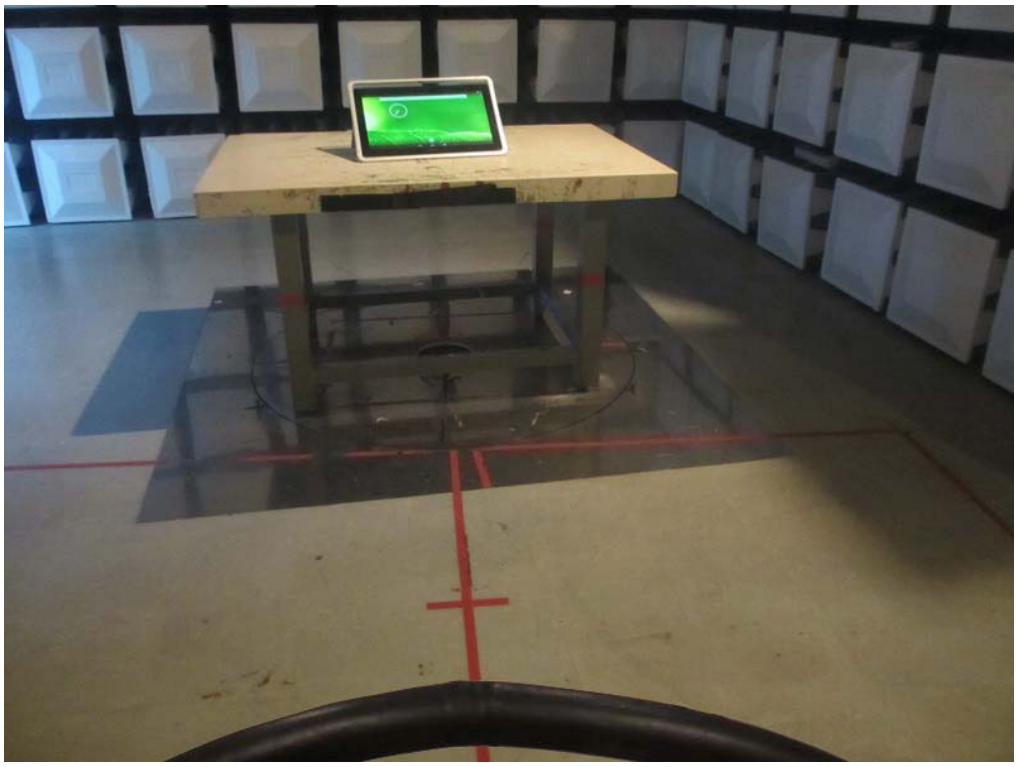
Remark: ”N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

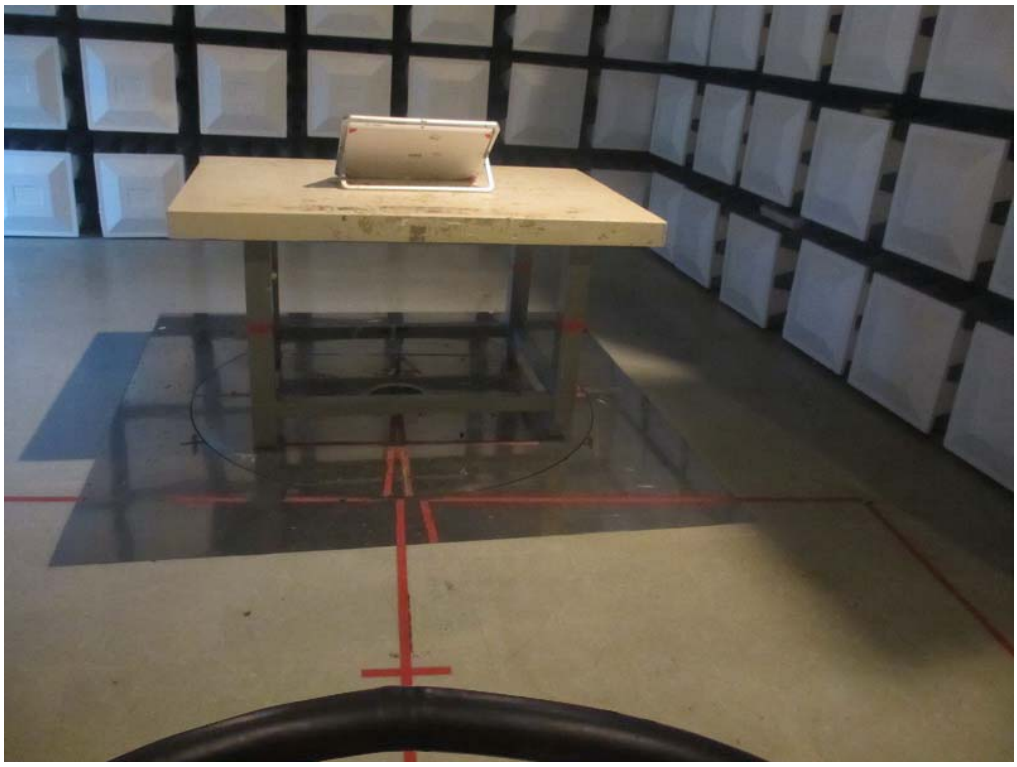
11.EUT TEST PHOTOS

Conducted Measurement Photos

Radiated Measurement Photos

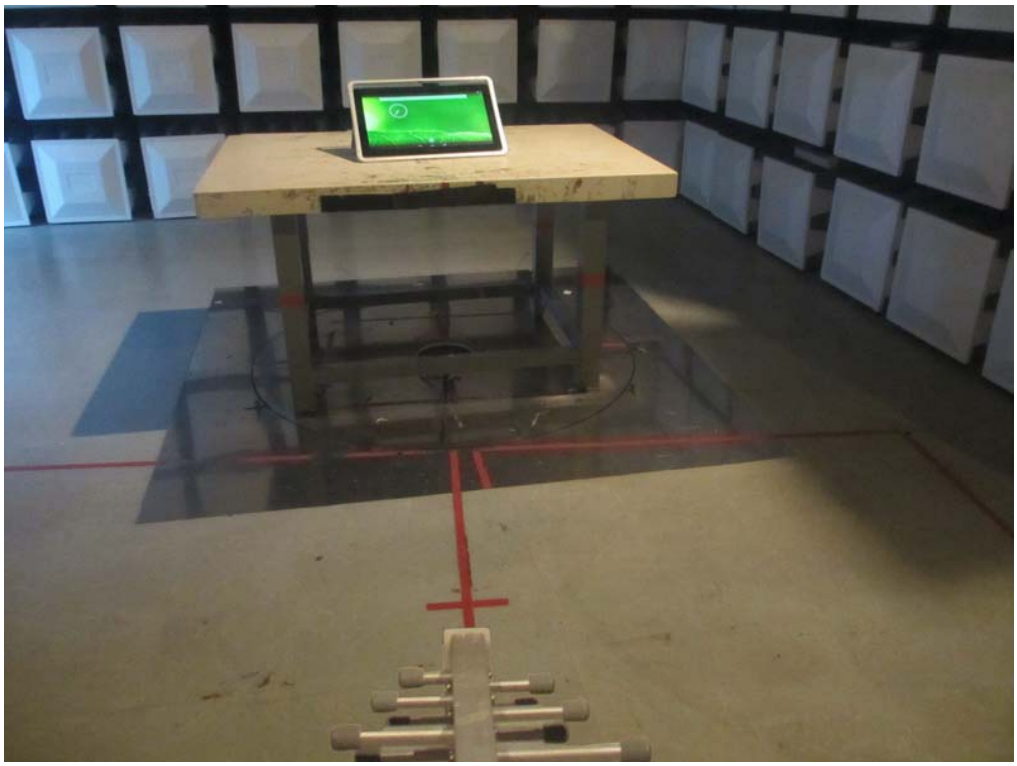
9KHz~30MHz





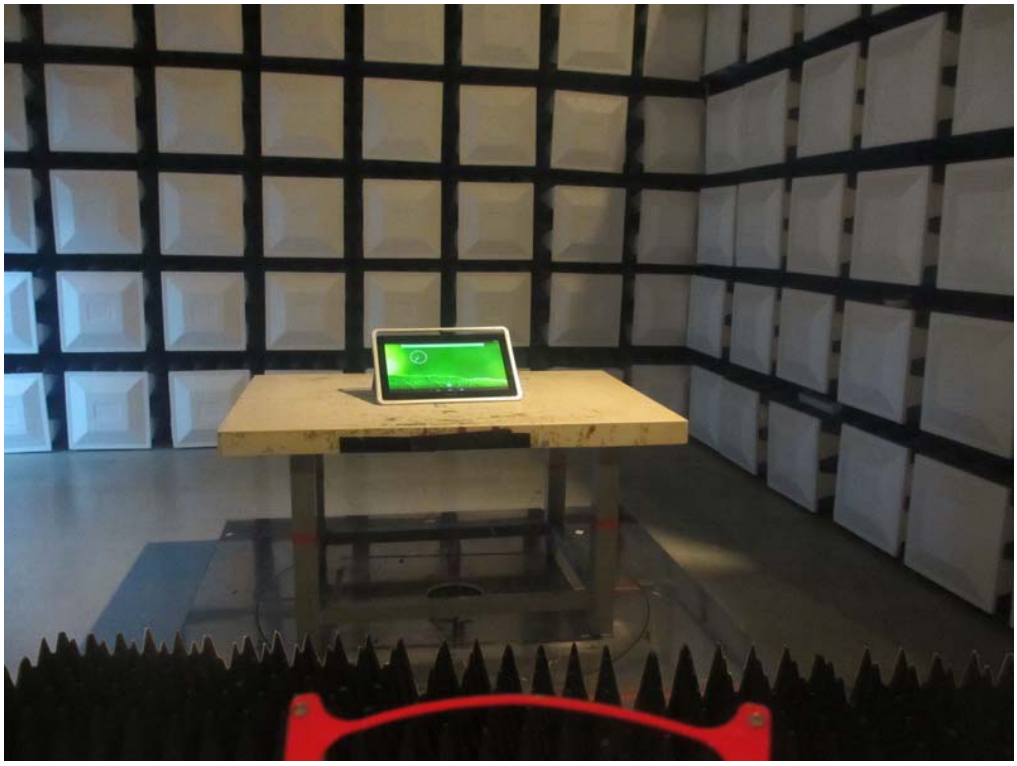
Radiated Measurement Photos

30~1000MHz



Radiated Measurement Photos

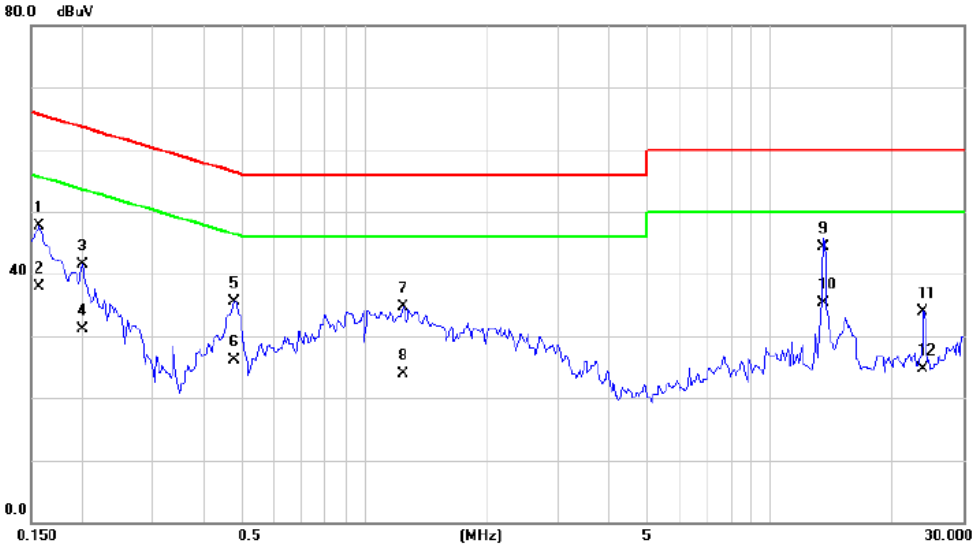
Above 1000MHz



ATTACHMENTA -CONDUCTED EMISSION

Test Mode :	TX MODE

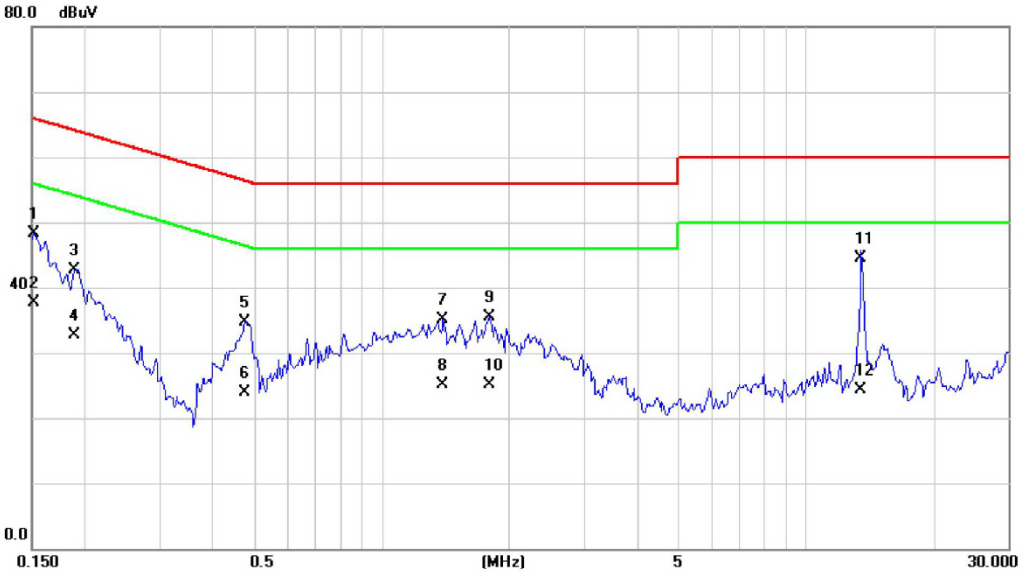
Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1577	38.10	9.52	47.62	65.58	-17.96	QP	
2		0.1577	28.34	9.52	37.86	55.58	-17.72	AVG	
3		0.2006	32.01	9.54	41.55	63.59	-22.04	QP	
4		0.2006	21.64	9.54	31.18	53.59	-22.41	AVG	
5		0.4781	25.83	9.69	35.52	56.37	-20.85	QP	
6		0.4781	16.37	9.69	26.06	46.37	-20.31	AVG	
7		1.2437	24.99	9.71	34.70	56.00	-21.30	QP	
8		1.2437	14.29	9.71	24.00	46.00	-22.00	AVG	
9		13.6013	34.08	10.19	44.27	60.00	-15.73	QP	
10	*	13.6013	25.16	10.19	35.35	50.00	-14.65	AVG	
11		24.0000	23.42	10.55	33.97	60.00	-26.03	QP	
12		24.0000	14.07	10.55	24.62	50.00	-25.38	AVG	

Test Mode :	TX MODE

Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1514	38.71	9.63	48.34	65.92	-17.58	QP	
2		0.1514	28.11	9.63	37.74	55.92	-18.18	AVG	
3		0.1890	33.01	9.61	42.62	64.08	-21.46	QP	
4		0.1890	23.16	9.61	32.77	54.08	-21.31	AVG	
5		0.4781	25.09	9.64	34.73	56.37	-21.64	QP	
6		0.4781	14.33	9.64	23.97	46.37	-22.40	AVG	
7		1.3960	25.40	9.70	35.10	56.00	-20.90	QP	
8		1.3960	15.37	9.70	25.07	46.00	-20.93	AVG	
9		1.7943	25.69	9.73	35.42	56.00	-20.58	QP	
10		1.7943	15.31	9.73	25.04	46.00	-20.96	AVG	
11	*	13.5152	34.25	10.23	44.48	60.00	-15.52	QP	
12		13.5152	14.16	10.23	24.39	50.00	-25.61	AVG	

ATTACHMENTB -RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode:	TX Mode

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0094	0°	76.35	24.97	101.32	108.10	-6.79	AVG
0.0095	0°	82.36	24.97	107.33	128.10	-20.78	PEAK
0.0233	0°	56.38	24.09	80.47	100.26	-19.79	AVG
0.0235	0°	59.35	24.09	83.44	120.26	-36.82	PEAK
0.0315	0°	57.35	23.57	80.92	97.64	-16.72	AVG
0.0316	0°	58.35	23.57	81.92	117.64	-35.72	PEAK
0.0424	0°	59.35	22.88	82.23	95.06	-12.83	AVG
0.0427	0°	63.35	22.88	86.23	115.06	-28.83	PEAK
0.4916	0°	17.45	19.82	37.27	73.77	-36.50	QP
1.7156	0°	18.63	19.53	38.16	69.54	-31.38	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0094	90°	76.35	24.30	100.65	128.19	-27.54	AVG
0.0095	90°	82.36	24.30	106.66	148.19	-41.53	PEAK
0.0235	90°	56.38	24.08	80.46	120.18	-39.72	AVG
0.0236	90°	59.35	24.08	83.43	140.18	-56.75	PEAK
0.0314	90°	57.35	23.58	80.93	117.67	-36.74	AVG
0.0316	90°	58.35	23.58	81.93	137.67	-55.74	PEAK
0.0425	90°	59.35	22.88	82.23	115.04	-32.81	AVG
0.0426	90°	63.35	22.88	86.23	135.04	-48.81	PEAK
0.4915	90°	17.45	19.82	37.27	73.77	-36.50	QP
1.7156	90°	18.63	19.53	38.16	69.54	-31.38	QP

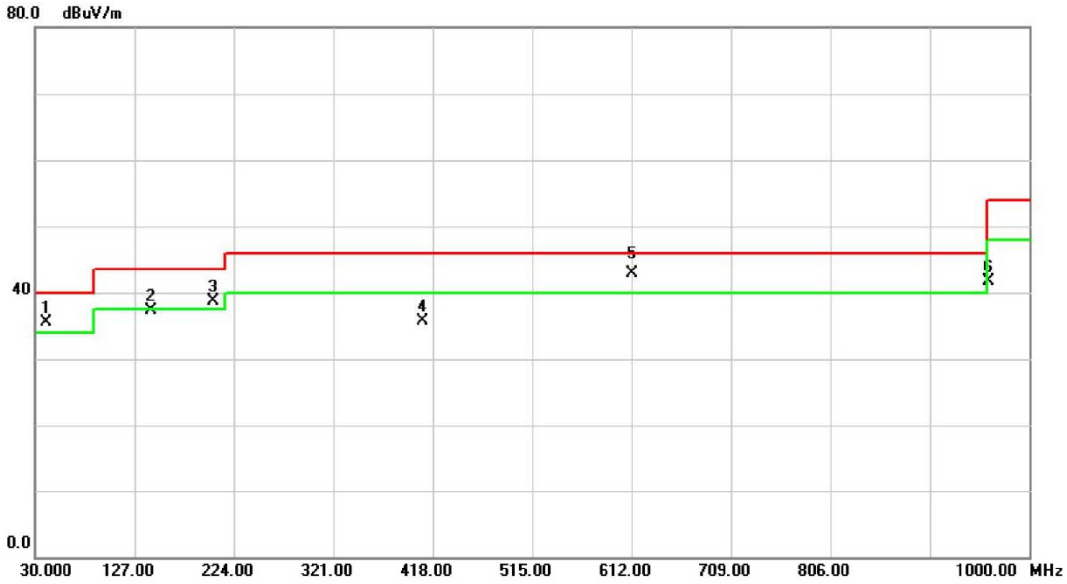
Remark:

(1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
(2) Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
(3) Limit line = specific limits (dBuV) + distance extrapolation factor.

ATTACHMENTC -RADIATED EMISSION (30MHZ TO 1000MHZ)

Test Mode :	Band 1/TX A Mode 5180MHz

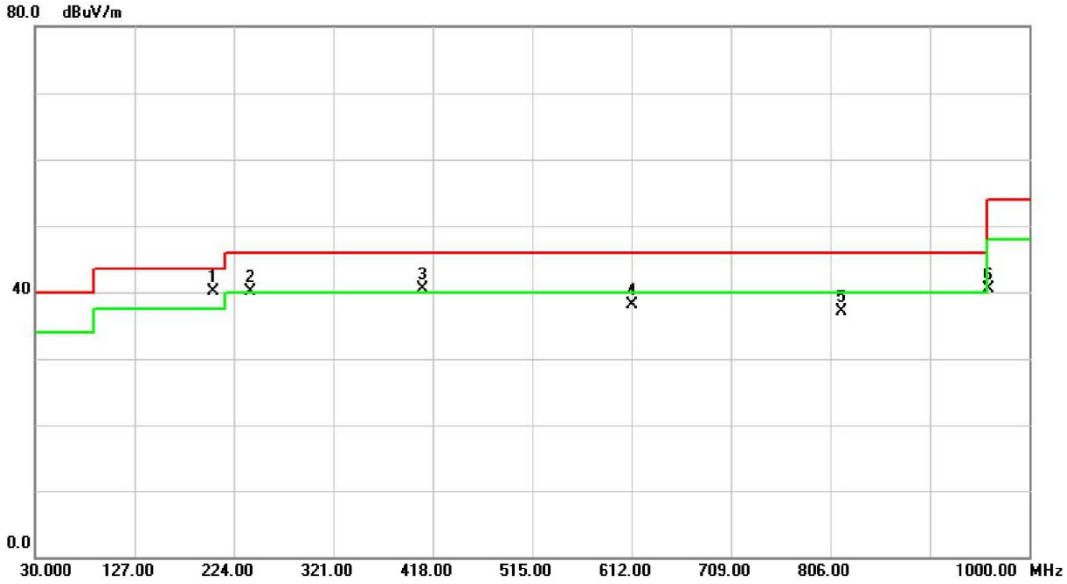
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	40.6700	49.96	-14.36	35.60	40.00	-4.40	peak	
2		142.5200	51.85	-14.50	37.35	43.50	-6.15	peak	
3	!	203.6300	55.59	-16.94	38.65	43.50	-4.85	peak	
4		408.3000	46.62	-10.95	35.67	46.00	-10.33	peak	
5	*	612.0000	49.72	-6.79	42.93	46.00	-3.07	QP	
6		960.2300	43.85	-2.19	41.66	54.00	-12.34	peak	

Test Mode :	Band 1/TX A Mode 5180MHz

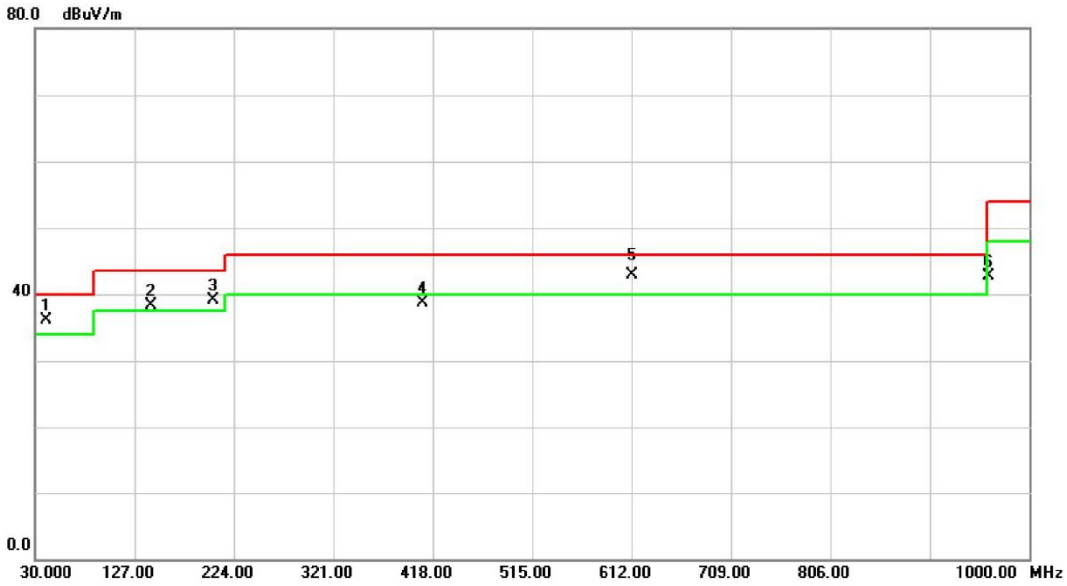
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	203.6300	57.07	-16.94	40.13	43.50	-3.37	peak	
2	!	239.5200	55.62	-15.50	40.12	46.00	-5.88	peak	
3	!	408.3000	51.52	-10.95	40.57	46.00	-5.43	peak	
4		612.0000	44.82	-6.79	38.03	46.00	-7.97	peak	
5		816.6700	41.67	-4.57	37.10	46.00	-8.90	peak	
6		960.2300	42.78	-2.19	40.59	54.00	-13.41	peak	

Test Mode :	Band 1/TX A Mode 5200MHz

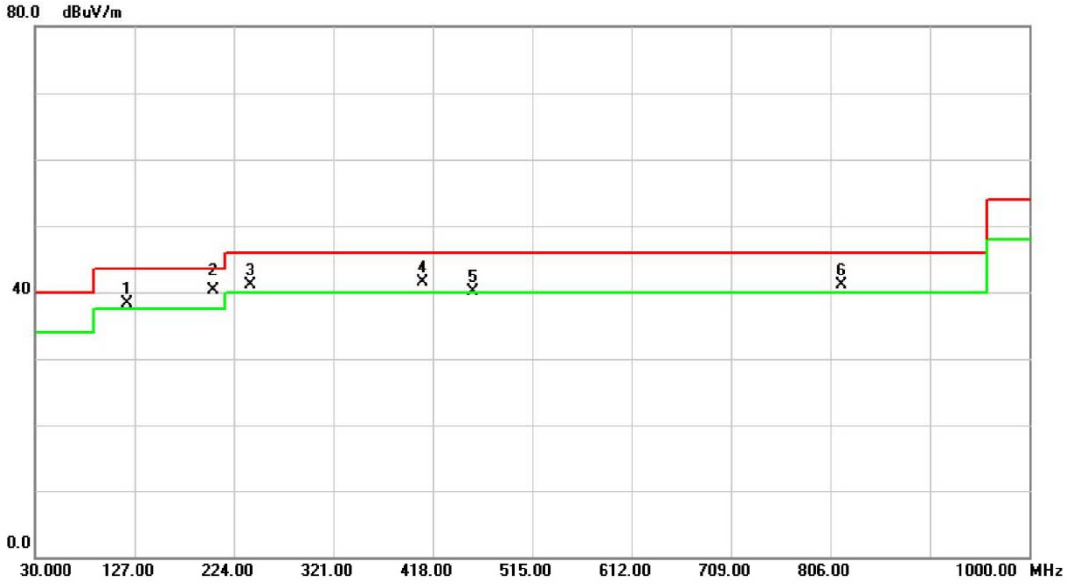
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	40.6700	50.46	-14.36	36.10	40.00	-3.90	peak	
2	!	142.5200	52.85	-14.50	38.35	43.50	-5.15	peak	
3	!	203.6300	56.09	-16.94	39.15	43.50	-4.35	peak	
4		408.3000	49.62	-10.95	38.67	46.00	-7.33	peak	
5	*	612.0000	49.72	-6.79	42.93	46.00	-3.07	QP	
6		960.2300	44.85	-2.19	42.66	54.00	-11.34	peak	

Test Mode :	Band 1/TX A Mode 5200MHz

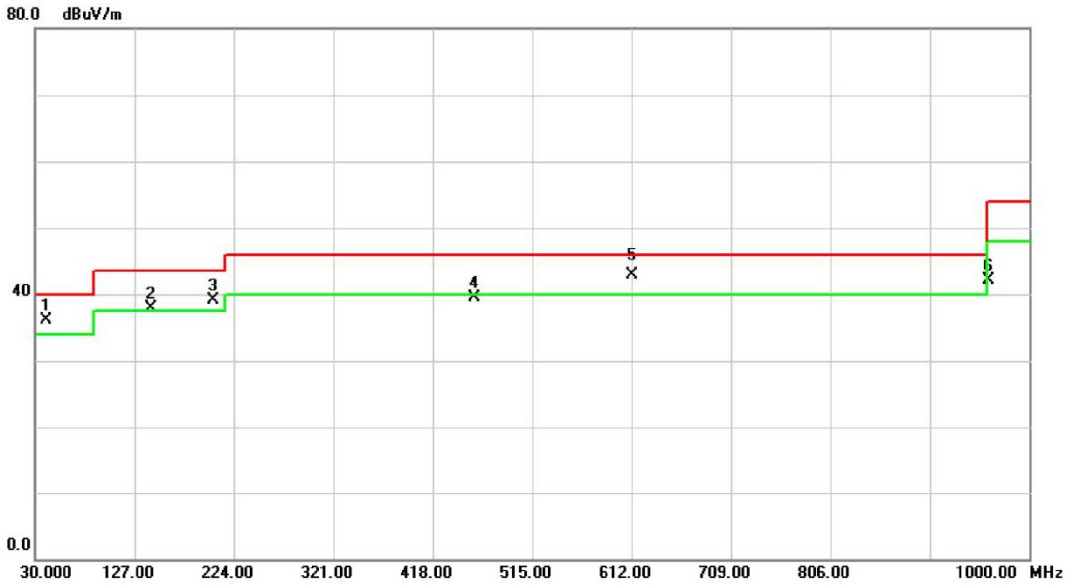
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	119.2400	55.00	-16.77	38.23	43.50	-5.27	peak	
2	*	203.6300	57.33	-16.94	40.39	43.50	-3.11	QP	
3	!	239.5200	56.62	-15.50	41.12	46.00	-4.88	peak	
4	!	408.3000	52.52	-10.95	41.57	46.00	-4.43	peak	
5	!	456.8000	49.78	-9.73	40.05	46.00	-5.95	peak	
6	!	816.6700	45.67	-4.57	41.10	46.00	-4.90	peak	

Test Mode :	Band 1/TX A Mode 5240MHz

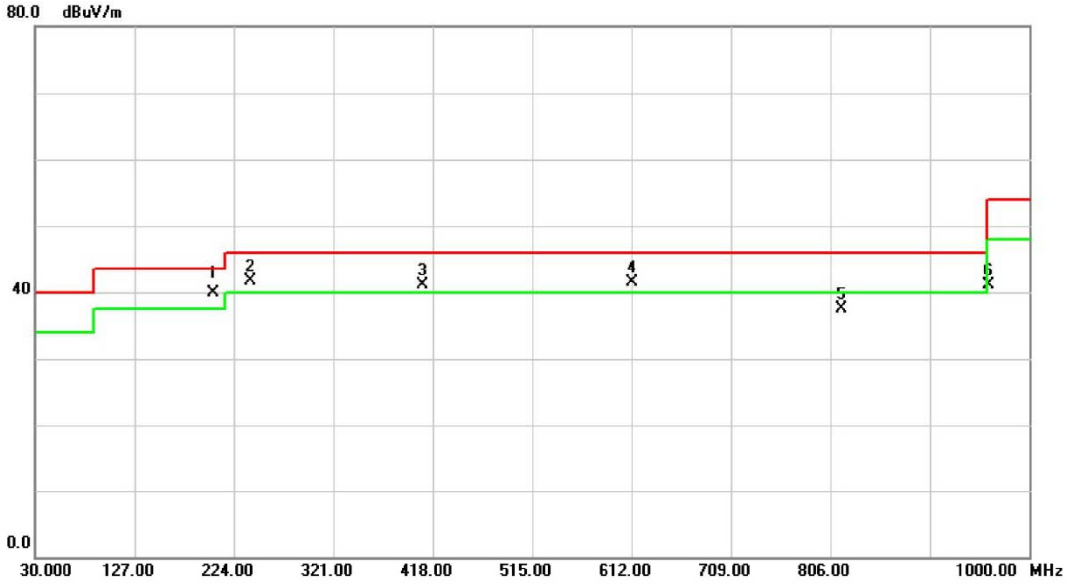
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	40.6700	50.46	-14.36	36.10	40.00	-3.90	peak	
2	!	142.5200	52.35	-14.50	37.85	43.50	-5.65	peak	
3	!	203.6300	56.09	-16.94	39.15	43.50	-4.35	peak	
4		458.7400	49.27	-9.72	39.55	46.00	-6.45	peak	
5	*	612.0000	49.72	-6.79	42.93	46.00	-3.07	QP	
6		960.2300	44.35	-2.19	42.16	54.00	-11.84	peak	

Test Mode :	Band 1/TX A Mode 5240MHz

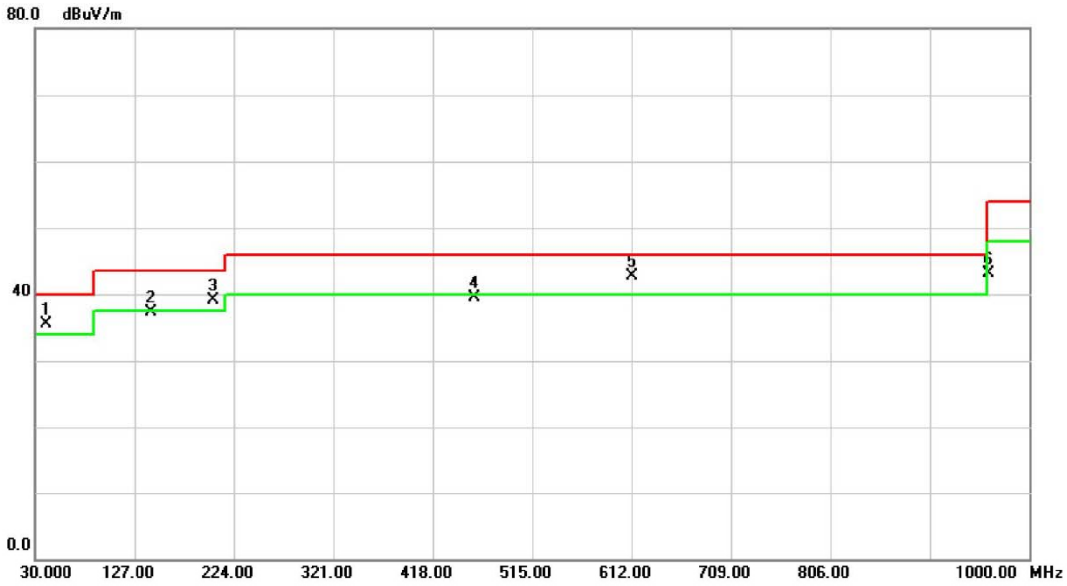
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	203.6300	56.82	-16.94	39.88	43.50	-3.62	QP	
2	!	239.5200	57.12	-15.50	41.62	46.00	-4.38	peak	
3	!	408.3000	52.02	-10.95	41.07	46.00	-4.93	peak	
4	!	612.0000	48.32	-6.79	41.53	46.00	-4.47	peak	
5		816.6700	42.17	-4.57	37.60	46.00	-8.40	peak	
6		960.2300	43.28	-2.19	41.09	54.00	-12.91	peak	

Test Mode :	Band 2/TX A Mode 5260MHz

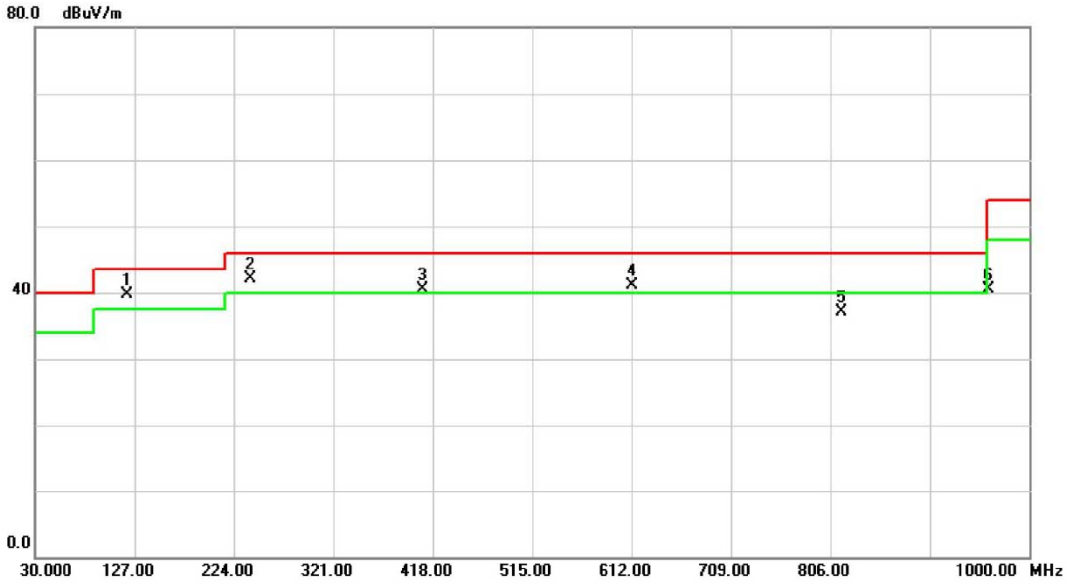
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	40.6700	49.96	-14.36	35.60	40.00	-4.40	peak	
2		142.5200	51.85	-14.50	37.35	43.50	-6.15	peak	
3	!	203.6300	56.09	-16.94	39.15	43.50	-4.35	peak	
4		458.7400	49.27	-9.72	39.55	46.00	-6.45	peak	
5	*	612.0000	49.56	-6.79	42.77	46.00	-3.23	peak	
6		960.2300	45.35	-2.19	43.16	54.00	-10.84	peak	

Test Mode :	Band 2/TX A Mode 5260MHz

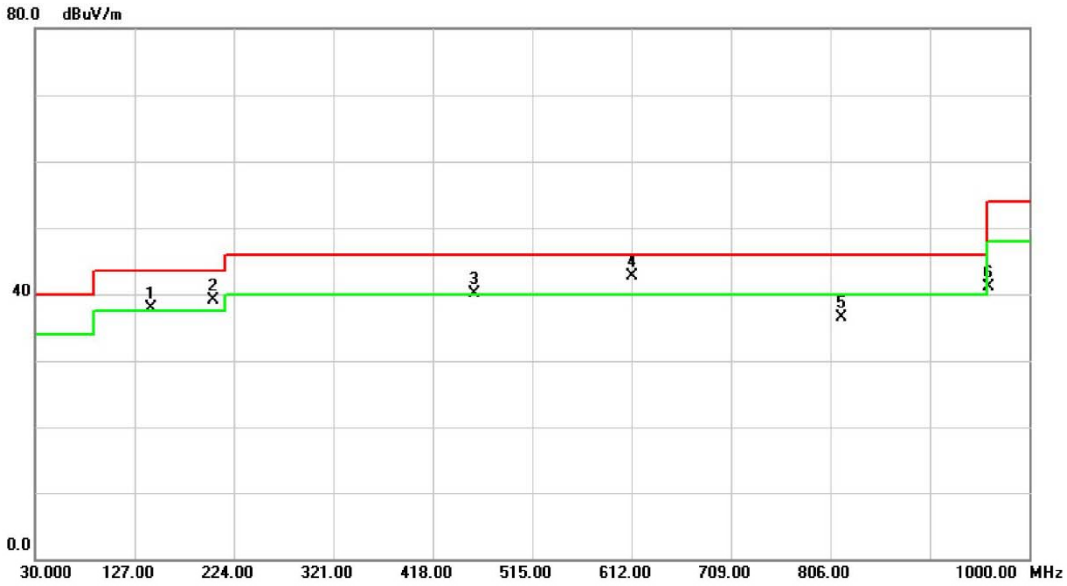
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	119.2400	56.50	-16.77	39.73	43.50	-3.77	peak	
2	!	239.5200	57.62	-15.50	42.12	46.00	-3.88	peak	
3	!	408.3000	51.52	-10.95	40.57	46.00	-5.43	peak	
4	!	612.0000	47.82	-6.79	41.03	46.00	-4.97	peak	
5		816.6700	41.67	-4.57	37.10	46.00	-8.90	peak	
6		960.2300	42.78	-2.19	40.59	54.00	-13.41	peak	

Test Mode :	Band 2/TX A Mode 5300MHz

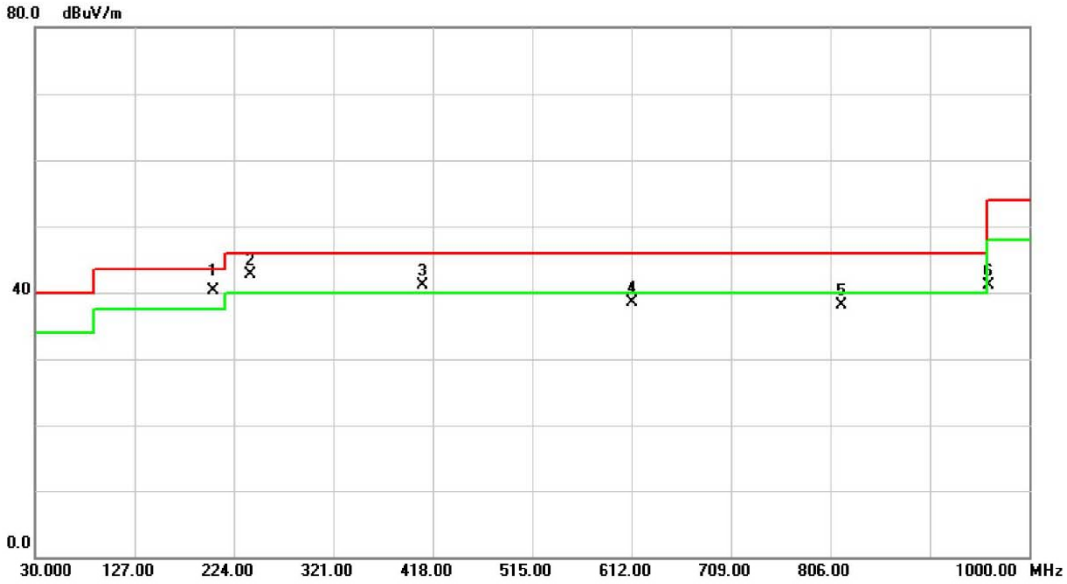
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	142.5200	52.35	-14.50	37.85	43.50	-5.65	peak	
2	!	203.6300	56.09	-16.94	39.15	43.50	-4.35	peak	
3	!	458.7400	49.77	-9.72	40.05	46.00	-5.95	peak	
4	*	612.0000	49.56	-6.79	42.77	46.00	-3.23	peak	
5		816.6700	41.03	-4.57	36.46	46.00	-9.54	peak	
6		960.2300	43.35	-2.19	41.16	54.00	-12.84	peak	

Test Mode :	Band 2/TX A Mode 5300MHz

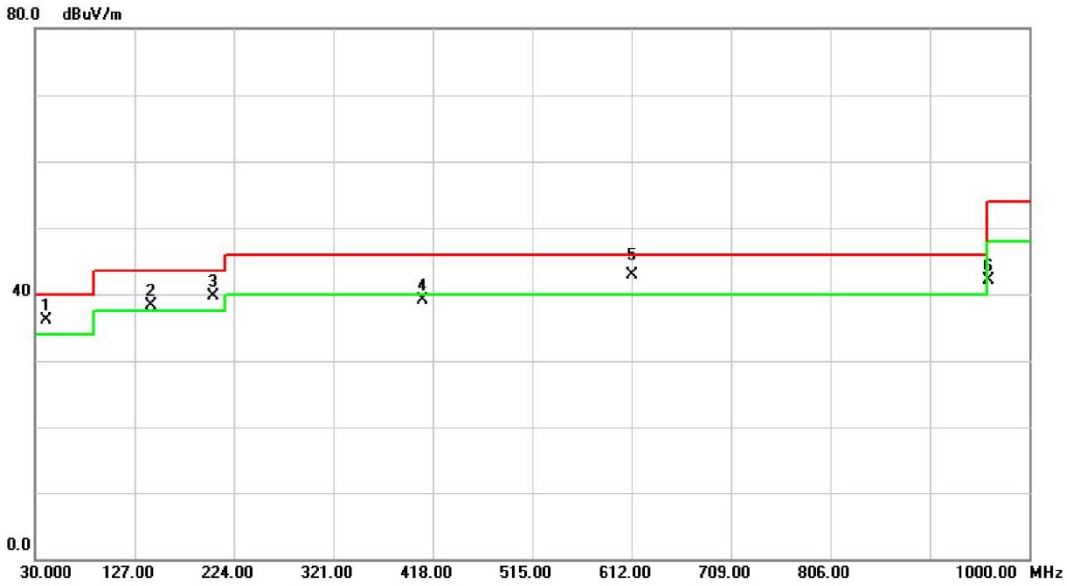
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	203.6300	57.33	-16.94	40.39	43.50	-3.11	QP	
2	!	239.5200	58.12	-15.50	42.62	46.00	-3.38	peak	
3	!	408.3000	52.02	-10.95	41.07	46.00	-4.93	peak	
4		612.0000	45.32	-6.79	38.53	46.00	-7.47	peak	
5		816.6700	42.67	-4.57	38.10	46.00	-7.90	peak	
6		960.2300	43.28	-2.19	41.09	54.00	-12.91	peak	

Test Mode :	Band 2/TX A Mode 5320MHz

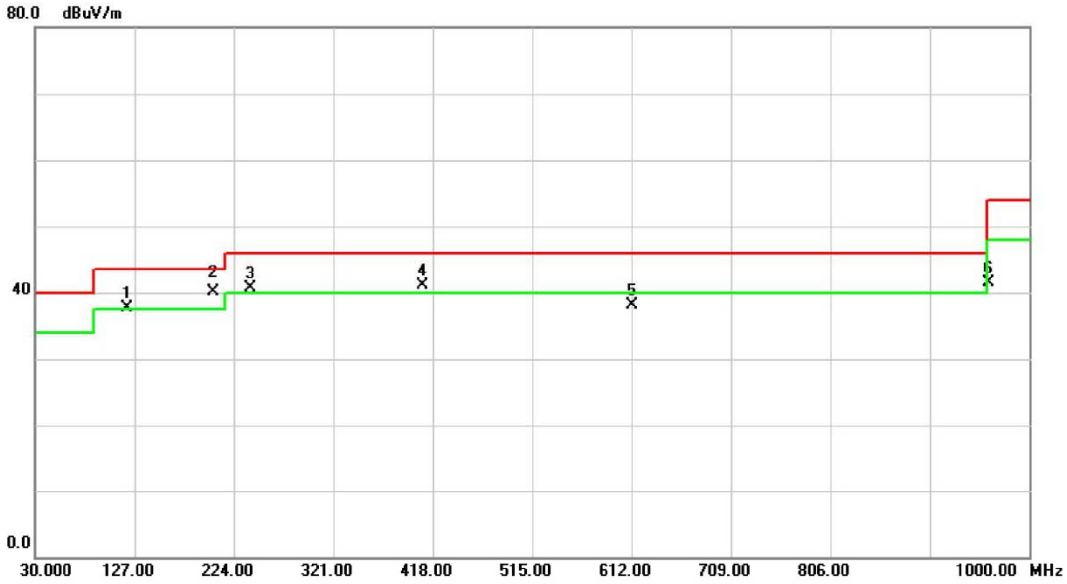
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	40.6700	50.46	-14.36	36.10	40.00	-3.90	peak	
2	!	142.5200	52.85	-14.50	38.35	43.50	-5.15	peak	
3	!	203.6300	56.59	-16.94	39.65	43.50	-3.85	peak	
4		408.3000	50.12	-10.95	39.17	46.00	-6.83	peak	
5	*	612.0000	49.73	-6.79	42.94	46.00	-3.06	QP	
6		960.2300	44.35	-2.19	42.16	54.00	-11.84	peak	

Test Mode :	Band 2/TX A Mode 5320MHz

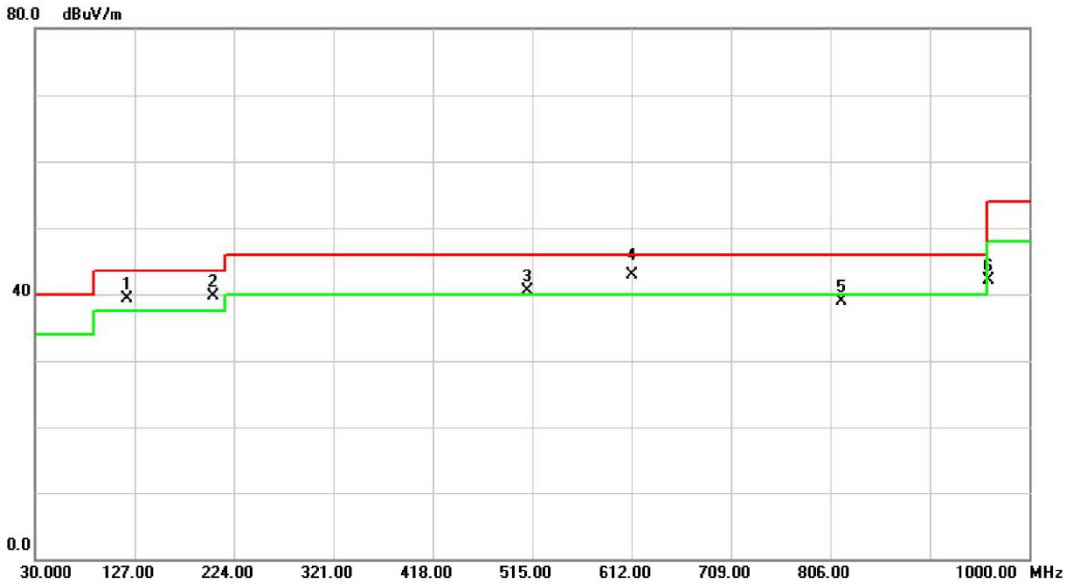
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	119.2400	54.50	-16.77	37.73	43.50	-5.77	peak	
2	*	203.6300	57.12	-16.94	40.18	43.50	-3.32	QP	
3	!	239.5200	56.12	-15.50	40.62	46.00	-5.38	peak	
4	!	408.3000	52.02	-10.95	41.07	46.00	-4.93	peak	
5		612.0000	44.82	-6.79	38.03	46.00	-7.97	peak	
6		960.2300	43.78	-2.19	41.59	54.00	-12.41	peak	

Test Mode :	Band 3/TX A Mode 5500MHz

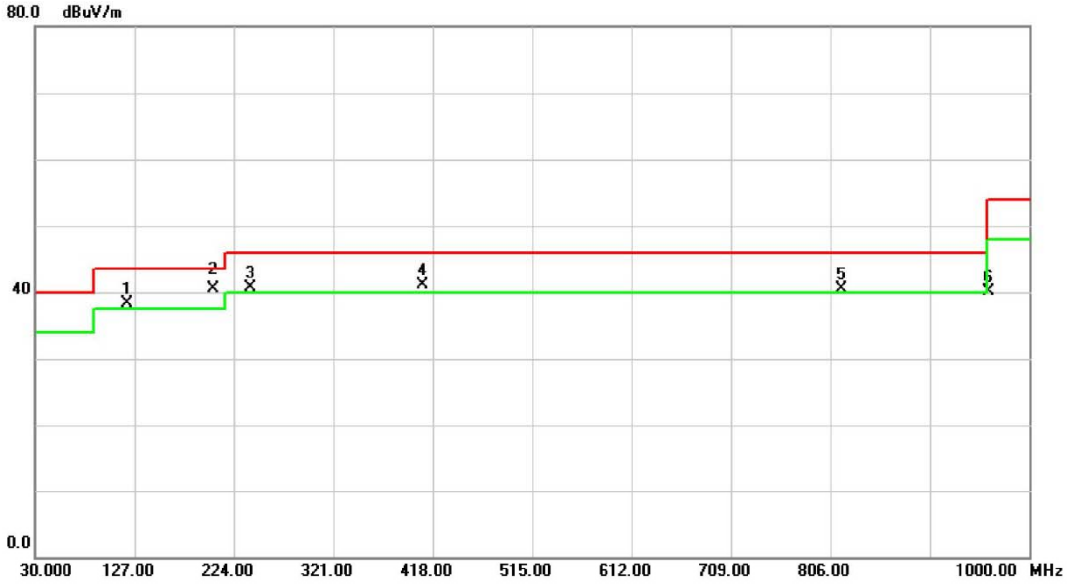
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	119.2400	56.16	-16.77	39.39	43.50	-4.11	peak	
2	!	203.6300	56.59	-16.94	39.65	43.50	-3.85	peak	
3	!	510.1500	49.70	-9.24	40.46	46.00	-5.54	peak	
4	*	612.0000	49.77	-6.79	42.98	46.00	-3.02	QP	
5		816.6700	43.53	-4.57	38.96	46.00	-7.04	peak	
6		960.2300	44.35	-2.19	42.16	54.00	-11.84	peak	

Test Mode :	Band 3/TX A Mode 5500MHz

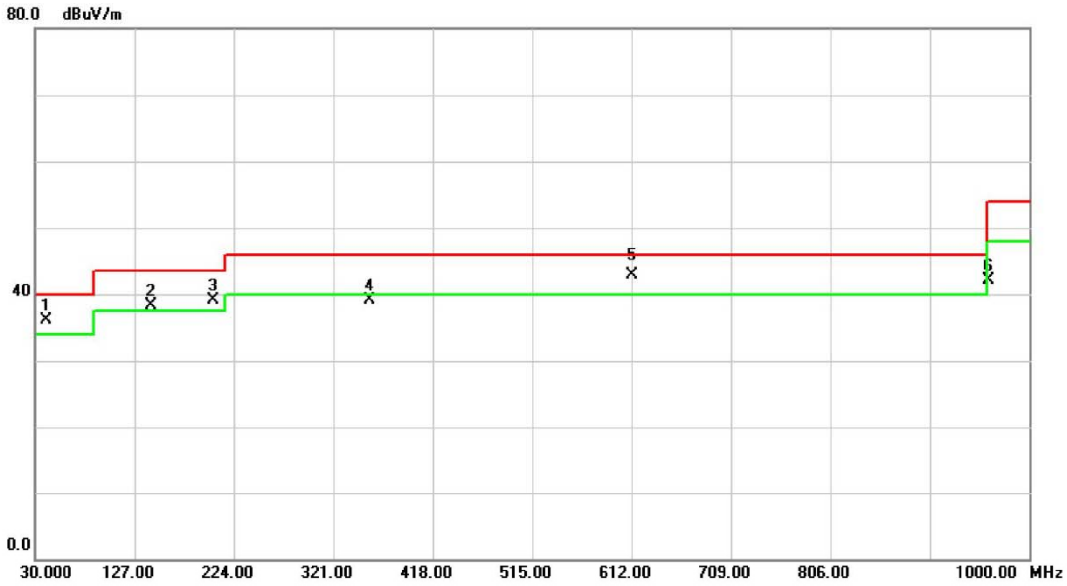
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	119.2400	55.00	-16.77	38.23	43.50	-5.27	peak	
2	*	203.6300	57.40	-16.94	40.46	43.50	-3.04	QP	
3	!	239.5200	56.12	-15.50	40.62	46.00	-5.38	peak	
4	!	408.3000	52.02	-10.95	41.07	46.00	-4.93	peak	
5	!	816.6700	45.17	-4.57	40.60	46.00	-5.40	peak	
6		960.2300	42.28	-2.19	40.09	54.00	-13.91	peak	

Test Mode :	Band 3/TX A Mode 5580MHz

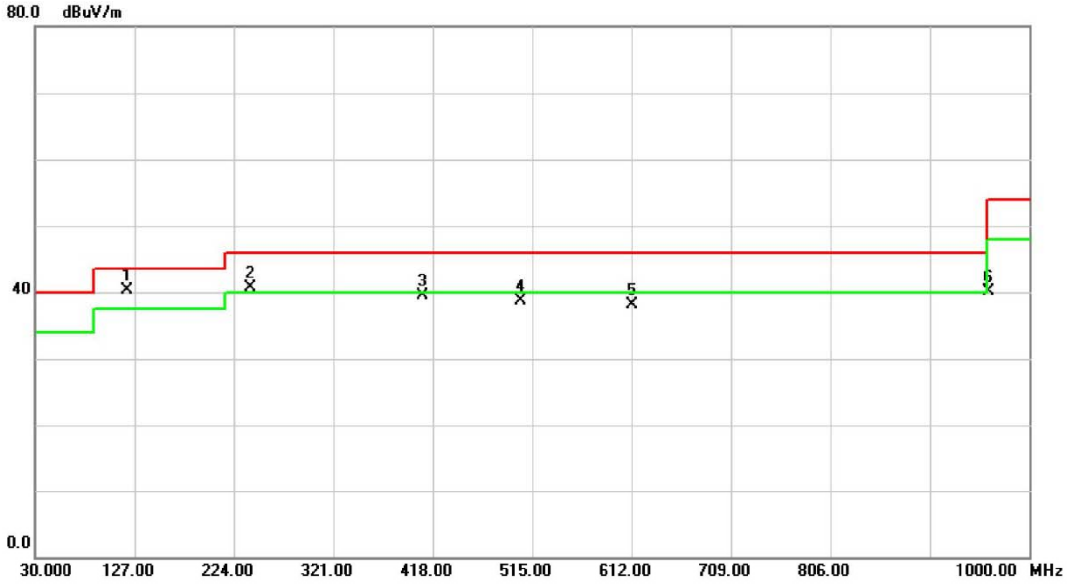
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	40.6700	50.46	-14.36	36.10	40.00	-3.90	peak	
2	!	142.5200	52.85	-14.50	38.35	43.50	-5.15	peak	
3	!	203.6300	56.09	-16.94	39.15	43.50	-4.35	peak	
4		356.8900	51.55	-12.40	39.15	46.00	-6.85	peak	
5	*	612.0000	49.63	-6.79	42.84	46.00	-3.16	QP	
6		960.2300	44.35	-2.19	42.16	54.00	-11.84	peak	

Test Mode :	Band 3/TX A Mode 5580MHz

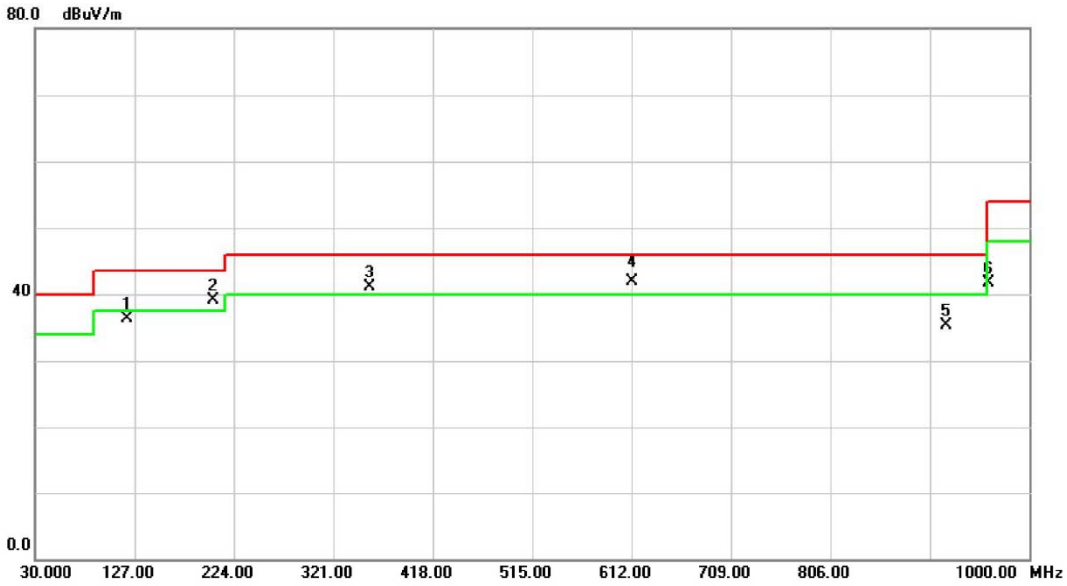
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	119.2400	57.00	-16.77	40.23	43.50	-3.27	peak	
2	!	239.5200	56.12	-15.50	40.62	46.00	-5.38	peak	
3		408.3000	50.52	-10.95	39.57	46.00	-6.43	peak	
4		504.3300	48.03	-9.38	38.65	46.00	-7.35	peak	
5		612.0000	44.82	-6.79	38.03	46.00	-7.97	peak	
6		960.2300	42.28	-2.19	40.09	54.00	-13.91	peak	

Test Mode :	Band 3/TX A Mode 5700MHz

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		119.2400	53.16	-16.77	36.39	43.50	-7.11	peak	
2	!	203.6300	56.09	-16.94	39.15	43.50	-4.35	peak	
3	!	356.8900	53.55	-12.40	41.15	46.00	-4.85	peak	
4	*	612.0000	48.79	-6.79	42.00	46.00	-4.00	QP	
5		918.5200	38.51	-3.20	35.31	46.00	-10.69	peak	
6		960.2300	43.85	-2.19	41.66	54.00	-12.34	peak	