FCC CERTIFICATION On Behalf of Comat Electronic (Shenzhen) Co., Ltd.

2.4G Wireless Mouse Model No.: U1G

FCC ID: RTX-U1G

Prepared for : Comat Electronic (Shenzhen) Co., Ltd.

Address : No.2 Lane 1, Xin'an 3rd 28 District, Baoan, Shenzhen,

China

Prepared by : ACCURATE TECHNOLOGY CO. LTD

Address : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

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Report Number : ATE20121910
Date of Test : August 17-31, 2012
Date of Report : August 31, 2012

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Test Report Certification

ApplicantComat Electronic (Shenzhen) Co., Ltd.ManufacturerComat Electronic (Shenzhen) Co., Ltd.

EUT Description : 2.4G Wireless Mouse

(A) MODEL NO.: U1G

(B) POWER SUPPLY: 3V DC ("AAA" batteries $2\times$)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.249 ANSI C63.4: 2009

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :	August 17-31, 2012	
Prepared by :	Apple Lu	
	(Engineer)	
Approved & Authorized Signer :	Lemil	
	(Manager)	

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT : 2.4G Wireless Mouse

Model Number : U1G Trade Name : COMAT

Power Supply : 3V DC ("AAA" batteries $2\times$)

Operate Frequency : 2402.000-2480.000MHz

Applicant : Comat Electronic (Shenzhen) Co., Ltd.

Address : No.2 Lane 1, Xin'an 3rd 28 District, Baoan, Shenzhen,

China

Manufacturer : Comat Electronic (Shenzhen) Co., Ltd.

Address : No.2 Lane 1, Xin'an 3rd 28 District, Baoan, Shenzhen,

China

Date of sample received: August 17, 2012

Date of Test : August 17-31, 2012

1.2.Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

1.3. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2 (9kHz-30MHz)

,

Radiated emission expanded uncertainty = 4.42dB, k=2

(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2

(Above 1GHz)

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Туре	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 8, 2012	Jan. 7, 2013
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 8, 2012	Jan. 7, 2013
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 8, 2012	Jan. 7, 2013
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 8, 2012	Jan. 7, 2013
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 8, 2012	Jan. 7, 2013
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 8, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 8, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 8, 2012	Jan. 7, 2013
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 8, 2012	Jan. 7, 2013
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 8, 2012	Jan. 7, 2013

3. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
Section 15.207	Conducted Emission	N/A
Section 15.249(a)	Fundamental and Harmonics Radiated Emission	Compliant
Section 15.249(d)	Spurious Radiated Emission	Compliant
Section 15.249(d)	Band Edge	Compliant
Section 15.203	Antenna Requirement	Compliant

Remark: "N/A" means "Not applicable".

4. FUNDAMENTAL AND HARMONICS RADIATED EMISSION FOR SECTION 15.249(A)

4.1.Block Diagram of Test Setup

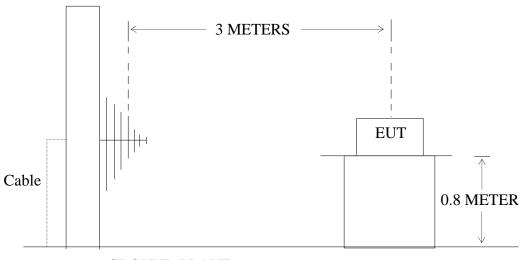
4.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: 2.4G Wireless Mouse)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



GROUND PLANE

(EUT: 2.4G Wireless Mouse)

4.2. The Emission Limit

4.2.1.For intentional radiators, According to section 15.249(a), Operation within the frequency band of 2.4 to 2.4835GHz, The fundamental field strength shall not exceed 94 dB μ V/m and the harmonics shall not exceed 54 dB μ V/m.

Fundamental	Field Strength of Fundamental	Field Strength of harmonics
Frequency	(millivolts/meter)	(microvolts/meter)
902-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

4.2.2.According to section 15.249(e), as shown in section 15.35(b), the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

4.3. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.3.1. 2.4G Wireless Mouse (EUT)

Model Number : U1G Serial Number : N/A

Manufacturer : Comat Electronic (Shenzhen) Co., Ltd.

4.4. Operating Condition of EUT

- 4.4.1. Setup the EUT and simulator as shown as Section 4.1.
- 4.4.2. Turn on the power of all equipment.
- 4.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402.000 2480.000 MHz MHz. We are select 2402.000MHz, 2440.000MHz, 2480.000MHz TX frequency to transmit.

4.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 120kHz in 30-1000MHz. and set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 25000MHz is checked.

4.6. The Field Strength of Radiation Emission Measurement Results **PASS.**

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	U1G	Power Supply:	DC 3V
Test Mode:	TX 2402.000MHz	Test Engineer:	Pei

Fundamental Radiated Emissions

Frequency	Reading(dBµV/m) Fa		Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2402.000	96.22	101.74	-7.45	88.77	94.29	94.00	114.00	-5.23	-19.71	Vertical
2402.000	98.45	107.76	-7.45	91.00	100.31	94.00	114.00	-3.00	-13.69	Horizontal

Harmonics Radiated Emissions

Frequency	Reading(dBμV/m)	Factor(dB)	Result(dBµV/m)		Limit(d)	Limit(dBµV/m)		in(dB)	Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
-	_	_	-	-	_	-	-	1	-	Vertical
-	-	-	-	-	-	-	-	1	-	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	U1G	Power Supply:	DC 3V
Test Mode:	TX 2440.000MHz	Test Engineer:	Pei

Fundamental Radiated Emissions

Frequency (MHz)	Reading(dBμV/m	Factor(dB) Corr.	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(14112)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
2440.000	97.68	102.04	-7.36	90.32	94.68	94.00	114.00	-3.68	-19.32	Vertical
2440.000	99.25	105.72	-7.36	91.89	98.36	94.00	114.00	-2.11	-15.64	Horizontal

Harmonics Radiated Emissions

Frequency (MHz)	Reading(dBμV/m	Factor(dB) Corr.	, ,		Limit(dBµV/m)		Margin(dB)		Polarization
(WITIZ)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	_	-	-	-	-	Vertical
-	_	_	-	_	_	-	-	-	-	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	U1G	Power Supply:	DC 3V
Test Mode:	TX 2480.000MHz	Test Engineer:	Pei

Fundamental Radiated Emissions

Frequency (MHz)	Reading(dBμV/m	Factor(dB) Corr.	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(11112)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
2480.000	96.17	101.80	-7.37	88.80	94.43	94.00	114.00	-5.20	-19.57	Vertical
2480.000	100.28	106.08	-7.37	92.91	98.71	94.00	114.00	-1.09	-15.29	Horizontal

Harmonics Radiated Emissions

Frequency (MHz)	Reading(dBμV/m	Factor(dB) Corr.	Result(d	BμV/m)	Limit(d)	BμV/m)	Marg	in(dB)	Polarization
(WITIZ)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	ı	-	Vertical
-	-	-	-	_	_	-	-	-	-	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

 $Result = Reading + Corrected \ Factor$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

5. SPURIOUS RADIATED EMISSION FOR SECTION 15.249(D)

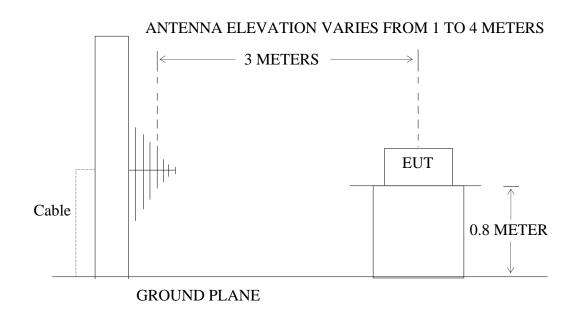
5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: 2.4G Wireless Mouse)

5.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: 2.4G Wireless Mouse)

5.2. The Emission Limit For Section 15.249(d)

5.2.1.Emission radiated outside of the specified frequency bands, except for harmonics, shall be comply with the general radiated emission limits in Section 15.209.

Radiation Emission Measurement Limits According to Section 15.209

	Limit					
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)	The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is			
0.009 – 0.490	2400/F(kHz)	300	performed with Average detector.			

0.490 – 1.705	24000/F(kHz)	30	Except those frequency bands
1.705 – 30.0	30	30	mention above, the final measurement for frequencies below
30 - 88	100	3	1000MHz is performed with Quasi Peak detector.
88 - 216	150	3	
216 - 960	200	3	
Above 960	500	3	

5.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1. 2.4G Wireless Mouse (EUT)

Model Number : U1G Serial Number : N/A

Manufacturer : Comat Electronic (Shenzhen) Co., Ltd.

5.4. Operating Condition of EUT

- 5.4.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2. Turn on the power of all equipment.
- 5.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402.000 2480.000 MHz. We are select 2402.000MHz, 2440.000MHz, 2480.000MHz TX frequency to transmit.

5.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9kHz to 25GHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

5.6. The Emission Measurement Result

PASS.

EUT: 2.4G Wireless Mouse Humidity: 50%	
Model No.: U1G Power Supply: DC 3V	
Test Mode: TX 2402.000MHz Test Engineer: Pei	

Below 30MHz

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	X
-	-	-	-	-	-	Y
-	-	-	-	-	-	Z

30MHz-25GHz

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	Vertical
-	-	-	-	-	-	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

 $Result = Reading + Corrected \ Factor$

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	U1G	Power Supply:	DC 3V
Test Mode:	TX 2440.000MHz	Test Engineer:	Pei

Below 30MHz

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	X
-	-	-	-	-	-	Y
-	-	-	-	-	-	Z

30MHz-25GH

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	Vertical
-	-	-	-	-	-	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	U1G	Power Supply:	DC 3V
Test Mode:	TX 2480.000MHz	Test Engineer:	Pei

Below 30MHz

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	X
-	-	-	-	-	-	Y
-	-	-	-	-	-	Z

30MHz-25GH

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	Vertical
-	-	-	-	-	-	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

6. BAND EDGES

6.1.The Requirement

6.1.1.Band Edge from 2400MHz to 2483.5MHz. Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

6.2.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.2.1. 2.4G Wireless Mouse (EUT)

Model Number : U1G Serial Number : N/A

Manufacturer : Comat Electronic (Shenzhen) Co., Ltd.

6.3. Operating Condition of EUT

- 6.3.1. Setup the EUT and simulator as shown as Section 4.1.
- 6.3.2. Turn on the power of all equipment.
- 6.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402.000-2480.000MHz MHz. We are select 2402.000MHz, 2480.000MHz TX frequency to transmit.

6.4. Test Procedure

- 1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
- 2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

RBW=1MHz, VBW=1MHz

6.5. The Measurement Result

Pass.

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	U1G	Power Supply:	DC 3V
Test Mode:	TX 2402.000MHz	Test Engineer:	Pei

Frequency	Reading(dBµV/m)		Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2310.000	37.18	45.41	-7.81	29.37	37.60	54.00	74.00	-24.63	-36.40	Vertical
2321.754	39.48	47.35	-7.81	31.67	39.54	54.00	74.00	-22.33	-34.46	Vertical
2390.000	40.00	48.10	-7.81	32.47	40.57	54.00	74.00	-21.53	-33.43	Vertical
2310.000	36.28	43.45	-7.81	28.47	35.64	54.00	74.00	-25.53	-38.36	Horizontal
2375.989	39.18	46.99	-7.62	31.56	39.37	54.00	74.00	-22.44	-34.63	Horizontal
2390.000	47.47	55.20	-7.53	39.94	47.67	54.00	74.00	-14.06	-26.33	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	U1G	Power Supply:	DC 3.0V
Test Mode:	TX 2480.000MHz	Test Engineer:	Pei

Frequency	Reading(dBµV/m)		Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2483.500	38.17	46.04	-7.37	30.80	38.67	54.00	74.00	-23.20	-35.33	Vertical
2490.993	42.82	51.77	-7.38	35.44	44.38	54.00	74.00	-18.56	-29.61	Vertical
2500.000	36.66	43.33	-7.40	29.26	35.93	54.00	74.00	-24.74	-38.07	Vertical
2483.500	37.58	45.87	-7.37	30.21	38.50	54.00	74.00	-23.79	-35.50	Horizontal
2490.834	40.99	48.94	-7.38	33.61	41.56	54.00	74.00	-20.39	-32.44	Horizontal
2500.000	35.16	42.68	-7.40	27.76	35.28	54.00	74.00	-26.24	-38.72	Horizontal

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

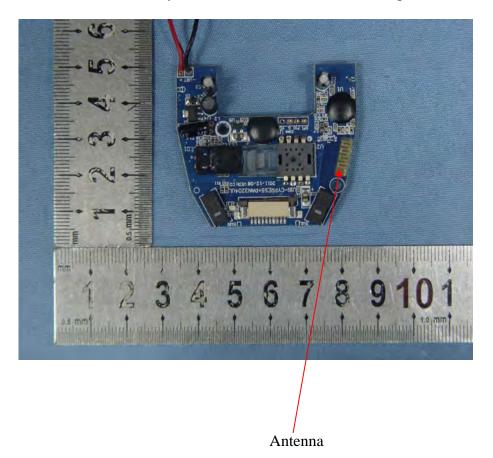
7. ANTENNA REQUIREMENT

7.1.The Requirement

7.1.1.According to 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.

7.2. Antenna Construction

The antenna is PCB Layout antenna, no consideration of replacement.



APPENDIX I (Test Curves)



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: STAR #2043

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

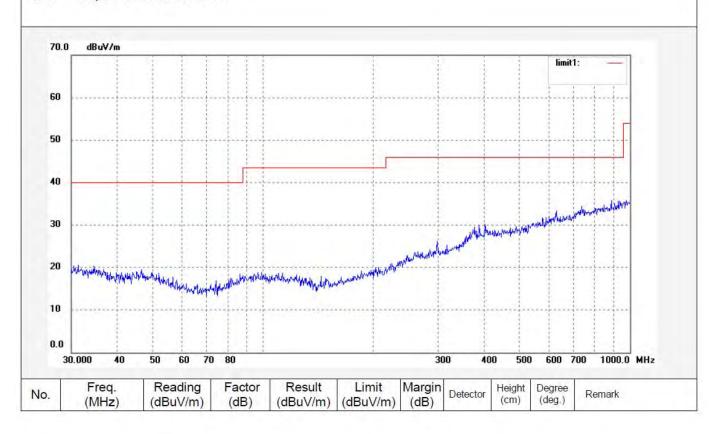
Model: U1G

Manufacturer: COMAT

Polarization: Horizontal Power Source: DC 3V

Date: 12/08/18/ Time: 8/50/00 Engineer Signature: Distance: 3m

Report No.:ATE20121910 Note:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: STAR #2044

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

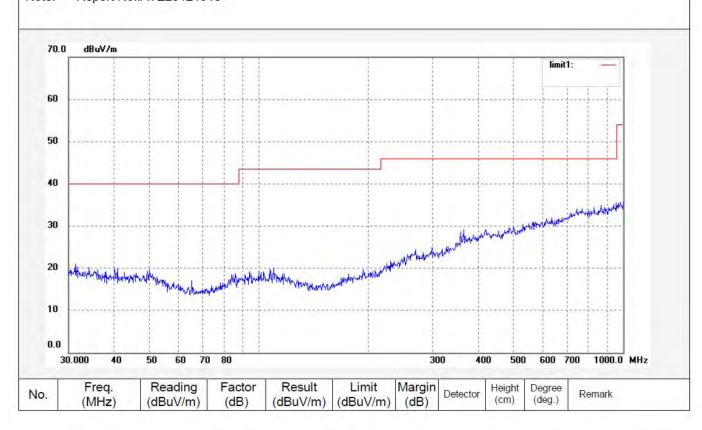
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V

Date: 12/08/18/
Time: 8/50/35
Engineer Signature:
Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2097

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

Model: U1G

Manufacturer: COMAT

idel. 010

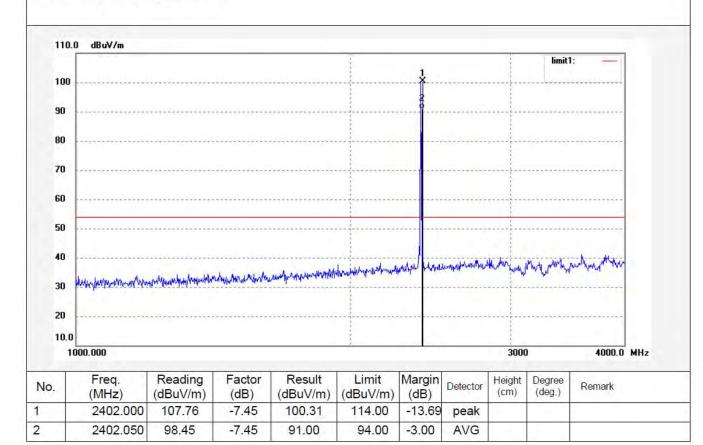
Polarization: Horizontal

Power Source: DC 3V

Date: 2012/08/20 Time: 17:02:16 Engineer Signature:

Distance: 3m

Note: Report No.:ATE20121910





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2098

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

Model: U1G

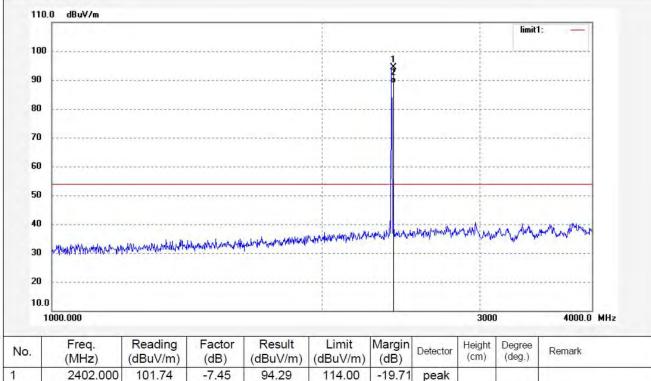
Manufacturer: COMAT

Note: Report No.:ATE20121910 Polarization: Vertical Power Source: DC 3V Date: 2012/08/20

Engineer Signature: Distance: 3m

Time: 17:06:19

limit1:



No.	Freq. (MHz)	(dBuV/m)	Factor (dB)	(dBuV/m)	(dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2402.000	101.74	-7.45	94.29	114.00	-19.71	peak				
2	2402.000	96.22	-7.45	88.77	94.00	-5.23	AVG			11	



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2104

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

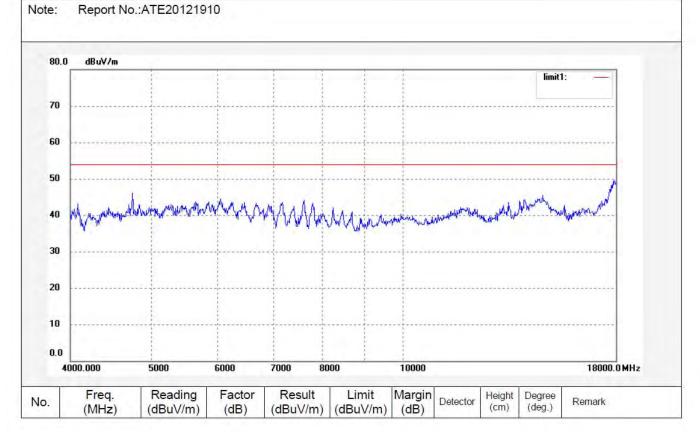
Model: U1G

Manufacturer: COMAT

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Polarization: Horizontal Power Source: DC 3V Date: 2012/08/20 Time: 17:20:24 Engineer Signature:

Distance: 3m





F1, Bldg, A, Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2103

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode:

Model: U1G

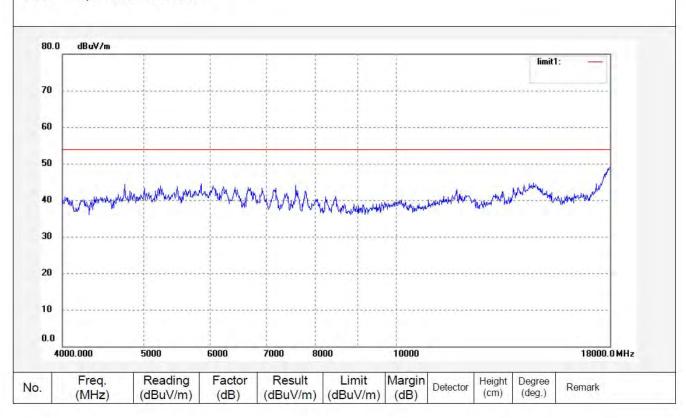
Note:

Manufacturer: COMAT

TX 2402MHz

Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V Date: 2012/08/20 Time: 17:19:08 Engineer Signature: Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #880

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 51 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

Model: U1G

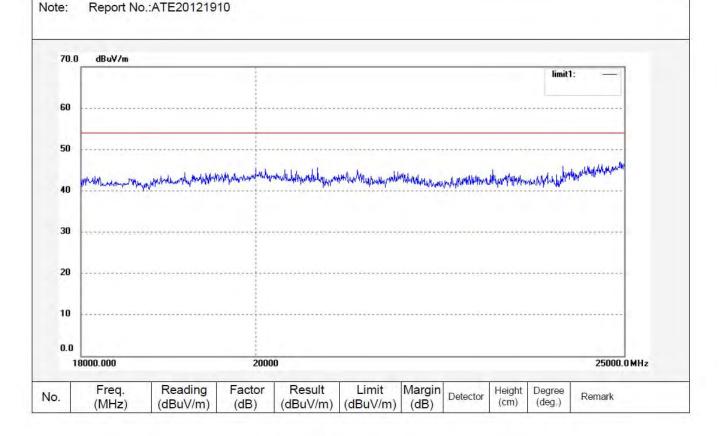
Manufacturer: COMAT

Polarization: Horizontal Power Source: DC 3V Date: 2012/08/21

Time: 20:20:32

Engineer Signature: Star

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #881

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 51 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

Model: U1G

Manufacturer: COMAT

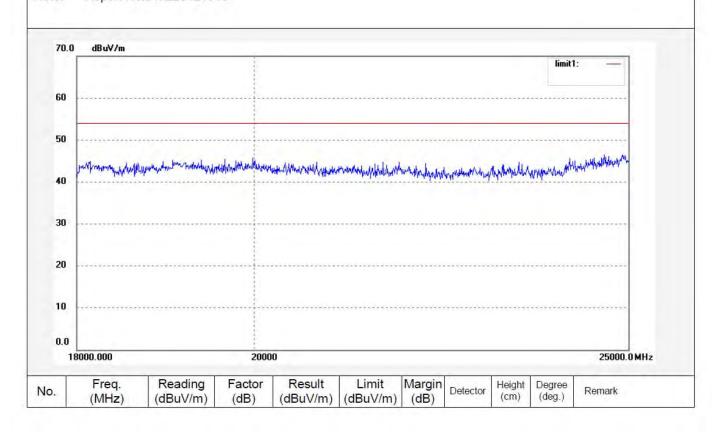
Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V Date: 2012/08/21

Engineer Signature: Star

Distance: 3m

Time: 20:23:43





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: STAR #2046

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2440MHz

Model: U1G

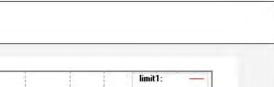
Manufacturer: COMAT

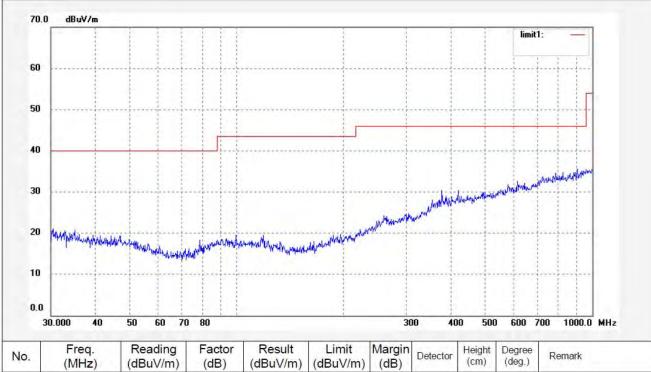
Note: Report No.:ATE20121910

Polarization: Horizontal Power Source: DC 3V

Date: 12/08/18/ Time: 8/51/32 Engineer Signature:

Distance: 3m







F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: STAR #2045

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2440MHz

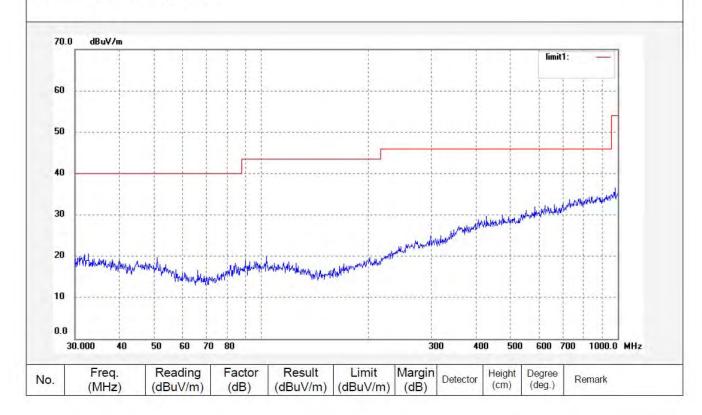
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V

Date: 12/08/18/
Time: 8/50/53
Engineer Signature:
Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2100

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode:

TX 2440MHz

Model: U1G

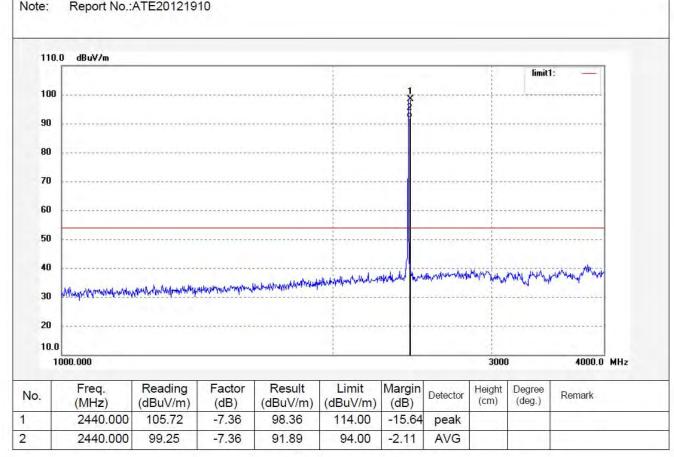
Manufacturer: COMAT

Report No.:ATE20121910

Polarization: Horizontal

Power Source: DC 3V

Date: 2012/08/20 Time: 17:09:57 Engineer Signature: Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2099

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2440MHz

Model: U1G

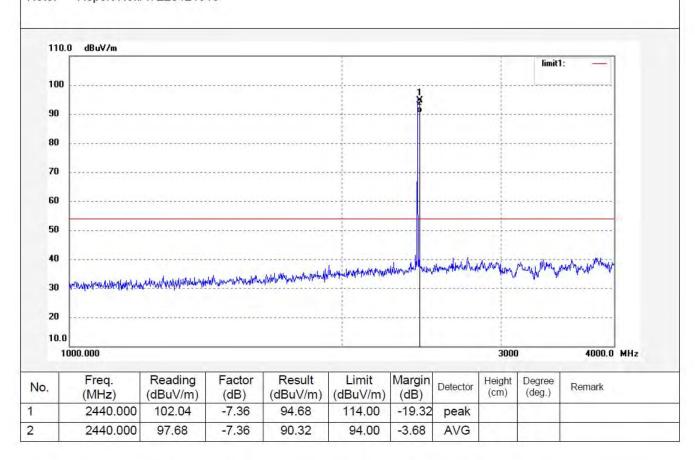
Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V

Date: 2012/08/20 Time: 17:08:26 Engineer Signature:

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2105

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2440MHz

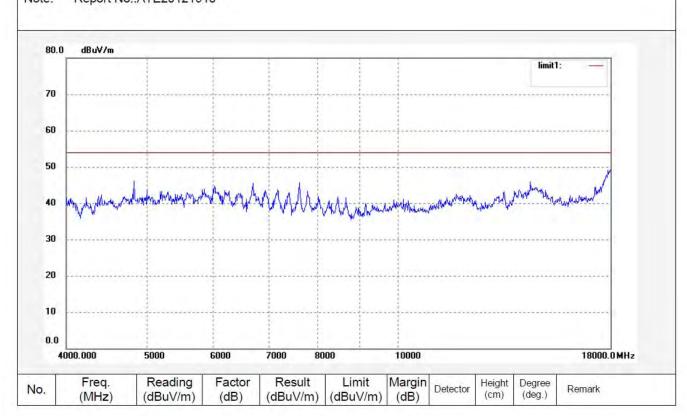
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Horizontal Power Source: DC 3V Date: 2012/08/20

Time: 17:21:35
Engineer Signature:
Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2106

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2440MHz

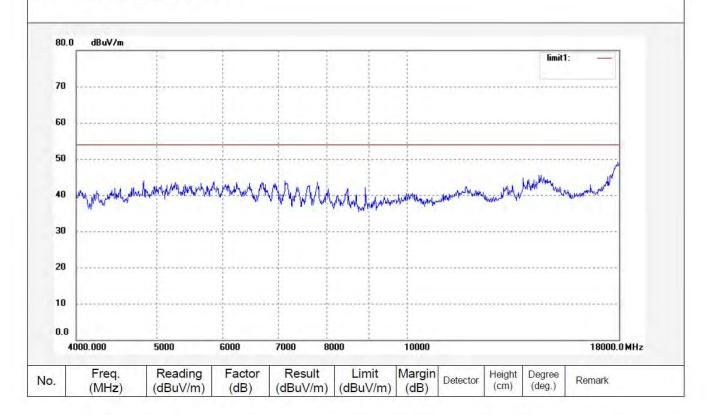
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V

Date: 2012/08/20 Time: 17:22:46 Engineer Signature: Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #883

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 51 % EUT: 2.4G Wireless mouse

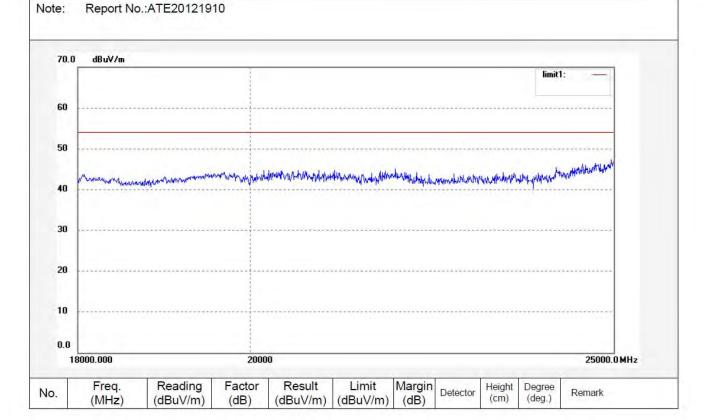
Mode: TX 2440MHz

Model: U1G

Manufacturer: COMAT

Polarization: Horizontal Power Source: DC 3V Date: 2012/08/21 Time: 20:31:13

Engineer Signature: Star





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #882

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 51 % EUT: 2.4G Wireless mouse

Mode: TX 2440MHz

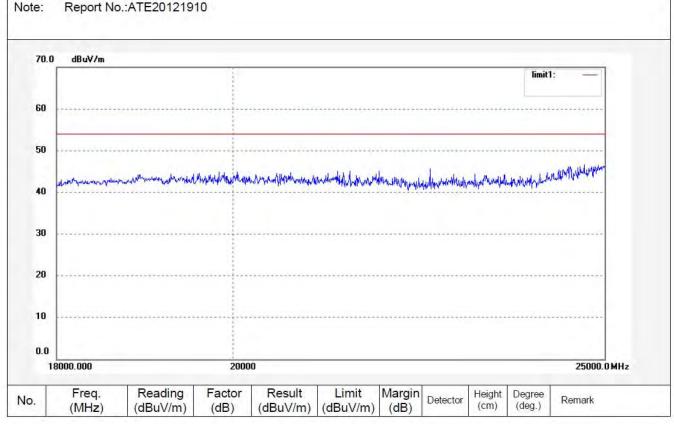
Model: U1G

Manufacturer: COMAT

Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V Date: 2012/08/21

Time: 20:27:58 Engineer Signature: Star





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Horizontal

Job No.: STAR #2047

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

Model: U1G

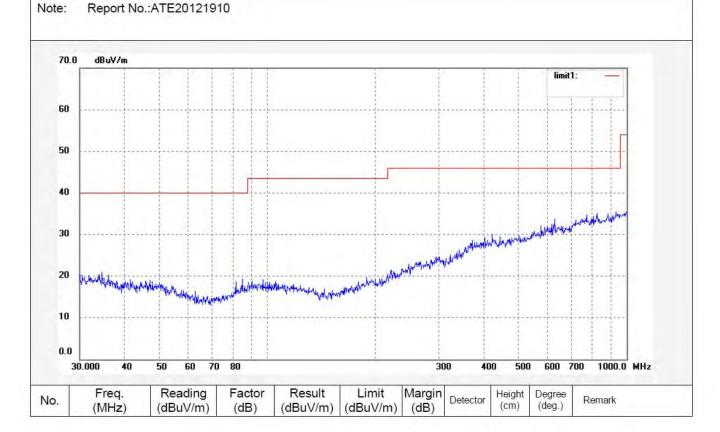
Manufacturer: COMAT

2.4G Wireless mouse

Date: 12/08/18/
Time: 8/51/53
Engineer Signature:
Distance: 3m

Power Source: DC 3V

Polarization:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: STAR #2048

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

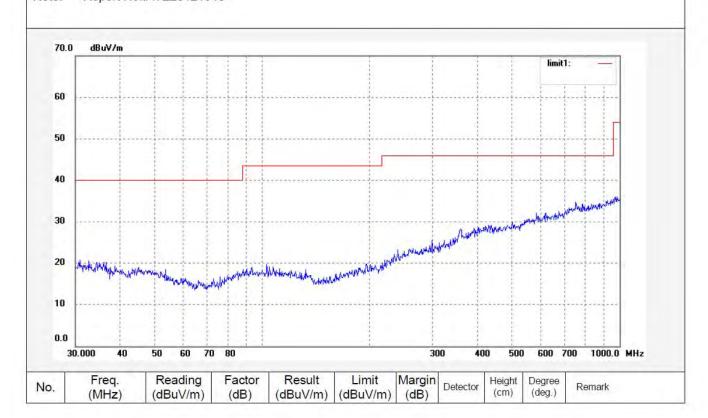
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V

Date: 12/08/18/
Time: 8/52/34
Engineer Signature:
Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2101

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

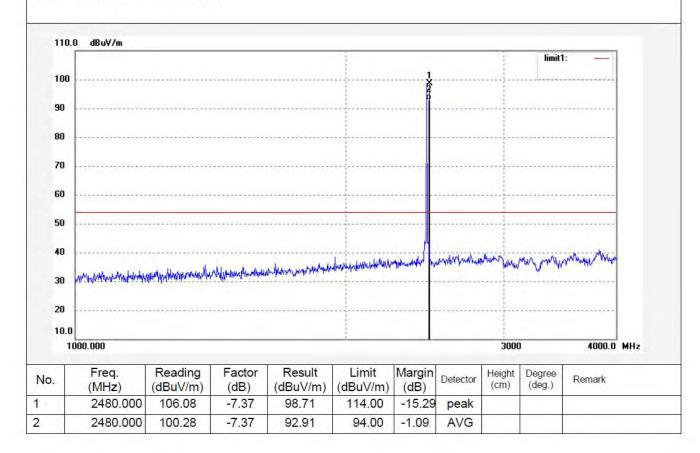
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Horizontal Power Source: DC 3V

Date: 2012/08/20 Time: 17:14:08 Engineer Signature:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2102

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

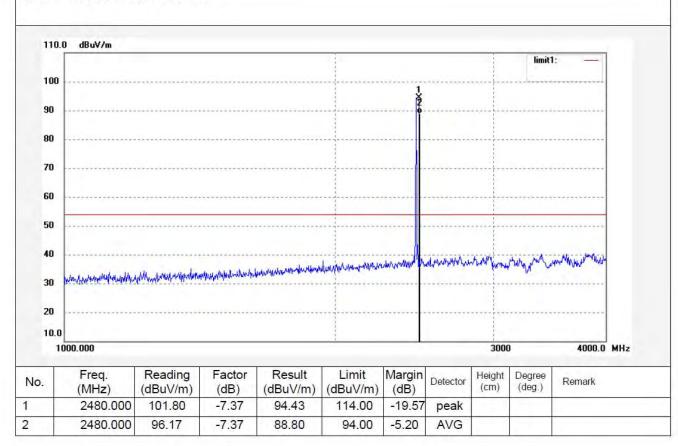
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V

Date: 2012/08/20 Time: 17:16:14 Engineer Signature: Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2108

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

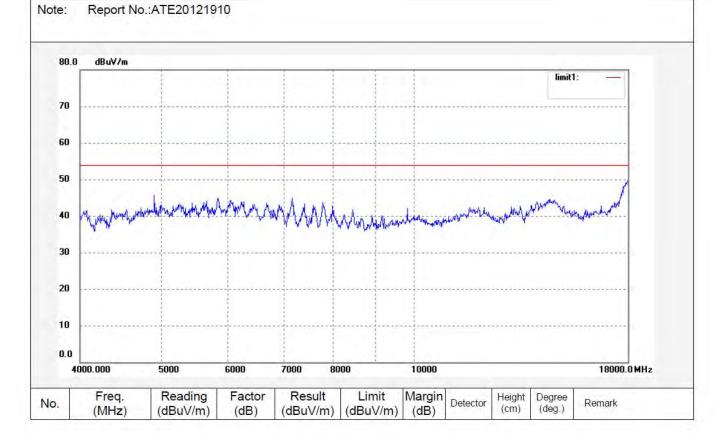
Mode: TX 2480MHz

Model: U1G

Manufacturer: COMAT

Polarization: Horizontal Power Source: DC 3V Date: 2012/08/20

Time: 17:25:13 Engineer Signature:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2107

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

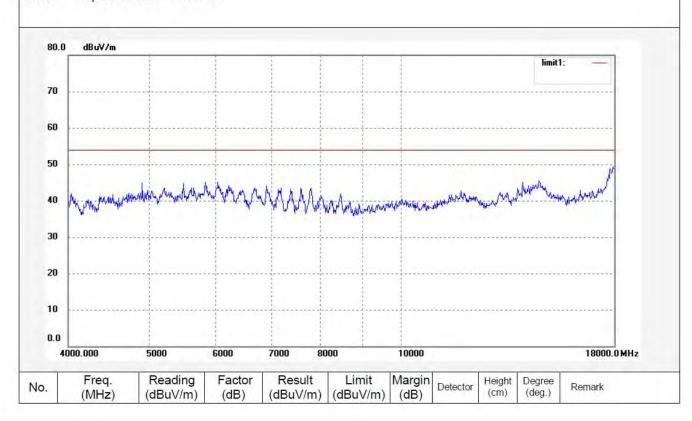
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Vertical Power Source: DC 3V Date: 2012/08/20

Time: 17:24:26
Engineer Signature:
Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #884

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 51 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

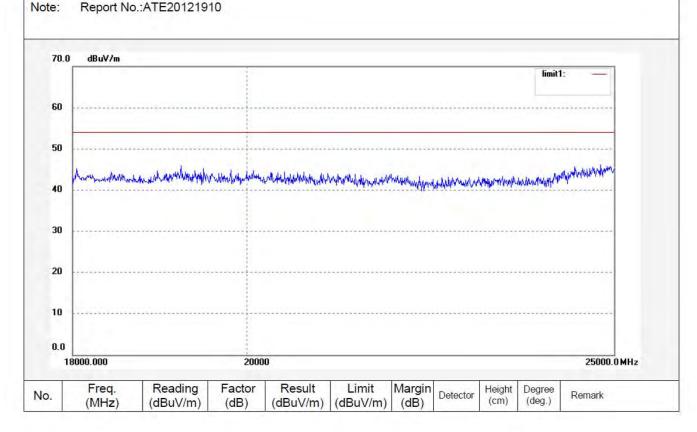
Model: U1G

Manufacturer: COMAT

arraraotaror.

Polarization: Horizontal Power Source: DC 3V Date: 2012/08/21 Time: 20:35:27

Engineer Signature: Star





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #885

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 51 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

Model: U1G

Manufacturer: COMAT

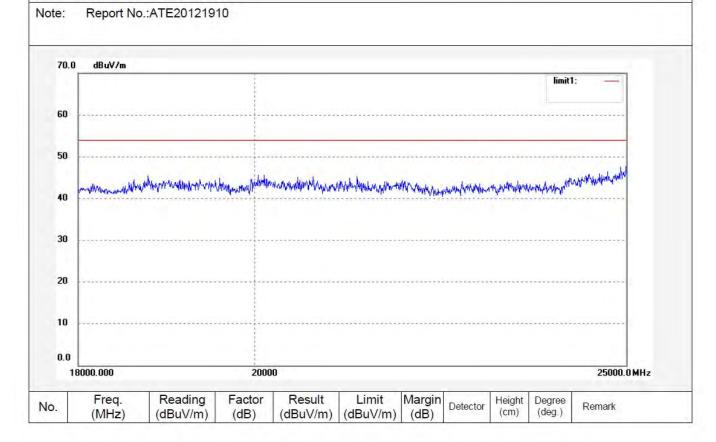
Manufactures 00MA

Polarization: Vertical Power Source: DC 3V Date: 2012/08/21

Engineer Signature: Star

Distance: 3m

Time: 20:39:40





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2112 Standard: FCC 15C PK Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

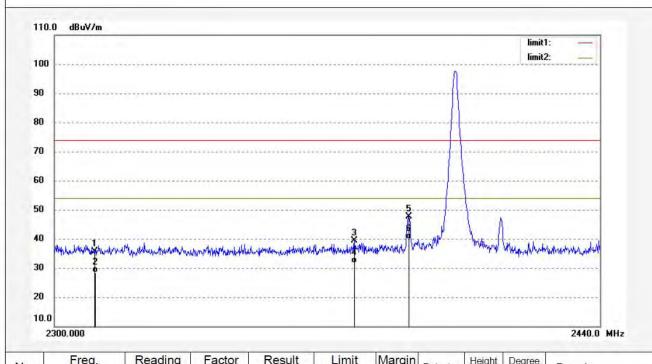
Model: U1G

Manufacturer: COMAT

Note: Report No.:ATE20121910

Polarization: Horizontal Power Source: DC 3V Date: 2012/08/20

Time: 17:34:57
Engineer Signature:
Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2310.000	43.45	-7.81	35.64	74.00	-38.36	peak				
2	2310.000	36.28	-7.81	28.47	54.00	-25.53	AVG				
3	2375.989	46.99	-7.62	39.37	74.00	-34.63	peak				
4	2375.989	39.18	-7.62	31.56	54.00	-22.44	AVG				
5	2390.000	55.20	-7.53	47.67	74.00	-26.33	peak				
6	2390.000	47.47	-7.53	39.94	54.00	-14.06	AVG				



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2111
Standard: FCC 15C PK
Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2402MHz

Model: U1G

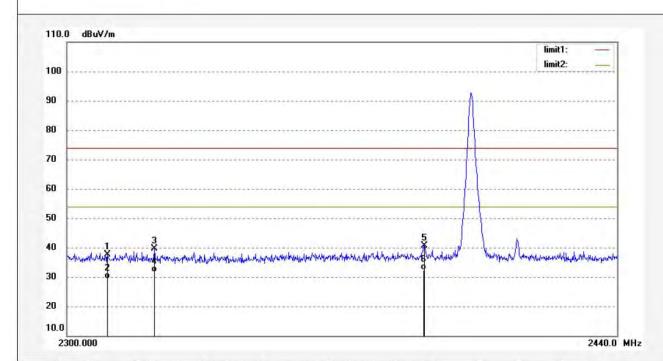
Manufacturer: COMAT

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Polarization: Vertical Power Source: DC 3V Date: 2012/08/20 Time: 17:32:00

Engineer Signature: Distance: 3m

Note: Report No.:ATE20121910



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	45.41	-7.81	37.60	74.00	-36.40	peak			
2	2310.000	37.18	-7.81	29.37	54.00	-24.63	AVG			1
3	2321.754	47.35	-7.81	39.54	74.00	-34.46	peak			
4	2321.754	39.48	-7.81	31.67	54.00	-22.33	AVG			
5	2390.000	48.10	-7.53	40.57	74.00	-33.43	peak			
6	2390.000	40.00	-7.53	32.47	54.00	-21.53	AVG			



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2109 Standard: FCC 15C PK Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

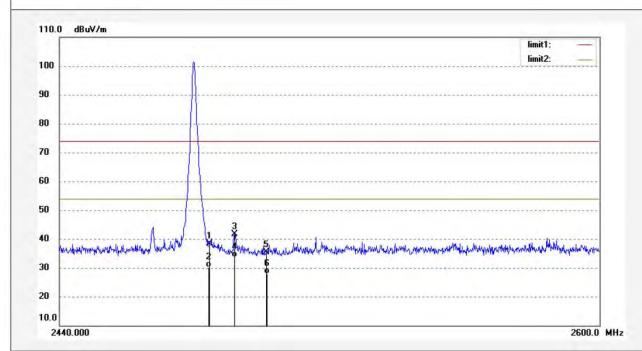
Model: U1G

Manufacturer: COMAT

Polarization: Horizontal Power Source: DC 3V Date: 2012/08/20 Time: 17:28:25 Engineer Signature:

Distance: 3m

Note: Report No.:ATE20121910



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	45.87	-7.37	38.50	74.00	-35.50	peak			
2	2483.500	37.58	-7.37	30.21	54.00	-23.79	AVG			
3	2490.834	48.94	-7.38	41.56	74.00	-32.44	peak			
4	2490.834	40.99	-7.38	33.61	54.00	-20.39	AVG			
5	2500.000	42.68	-7.40	35.28	74.00	-38.72	peak			
6	2500.000	35.16	-7.40	27.76	54.00	-26.24	AVG			



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star #2110 Standard: FCC 15C PK Test item: Radiation Test

Temp.(C)/Hum.(%) 24 C / 48 % EUT: 2.4G Wireless mouse

Mode: TX 2480MHz

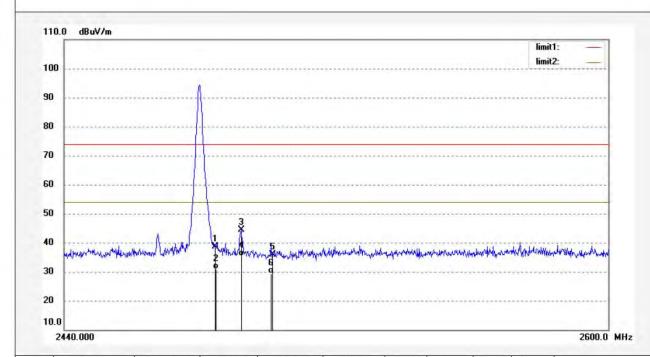
Model: U1G

Manufacturer: COMAT

Polarization: Vertical Power Source: DC 3V Date: 2012/08/20 Time: 17:30:16

> Engineer Signature: Distance: 3m

Report No.:ATE20121910 Note:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	46.04	-7.37	38.67	74.00	-35.33	peak			
2	2483.500	38.17	-7.37	30.80	54.00	-23.20	AVG			
3	2490.993	51.77	-7.38	44.39	74.00	-29.61	peak			
4	2490.993	42.82	-7.38	35.44	54.00	-18.56	AVG			
5	2500.000	43.33	-7.40	35.93	74.00	-38.07	peak			
6	2500.000	36.66	-7.40	29.26	54.00	-24.74	AVG			