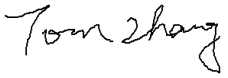
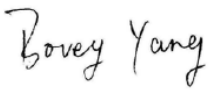
FCC RADIO TEST REPORT

Report Reference No. ..... :	NTEK-2011NT1207763F	
Compiled by (+ signature)	Tom Zhang	
Approved by (+ signature)	Bovey Yang	
Applicant's name ..... :	FTR System (Shanghai), Inc.	
Address..... :	#500, Suite 108, Bi-Bo Rd, Hi-Tech Park, Pudong, Shanghai, 201203 China	
Manufacture's Name ..... :	FTR System (Shanghai), Inc.	
Address..... :	#500, Suite 108, Bi-Bo Rd, Hi-Tech Park, Pudong, Shanghai, 201203 China	
Test specification:		
Standard ..... :	FCC Part15.249	
Test procedure ..... :	ANSI C63.4-2003	
Test item description		
Product name ..... :	Intelligent Robotic Trolley	
FCC ID	**Z26-CT**	
Trademark ..... :	N/A	
Model and/or type reference :	CT-2000;CT2000;CT2000-AA;CT2000-AB; CT2000-AC;CT2000-BA;CT2000-BB; CT2000-BC;CT2000-CA;CT2000-LJ;CT2000-MJ	
Rating(s) ..... :	DC 24V	
Testing Laboratory information:		
Testing Laboratory Name ..... :	NTEK Testing Technology Co., Ltd	
Address ..... :	1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao ' an District, Shenzhen P.R. China.	

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

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Testing ..... :	
Date of receipt of test item ..... :	08 Dec. 2011
Date (s) of performance of tests ..... :	08 Dec. 2011 ~13 Dec. 2011
Date of Issue..... :	13 Dec. 2011
Test Result..... :	**Pass**

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15, Subpart C (15.249)			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	Pass	
15.203	Antenna Requirement	Pass	
15.249	Radiated Spurious Emission	Pass	
15.249	Occupied Bandwidth	Pass	

1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd
Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.
FCC FRN Registration Nombre:238937; IC Registration Nombre:9270A-1

1.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	Radiated Emission Test	±3.17dB
3	RF power,conducted	±0.16dB
4	Spurious emissions,conducted	±0.21dB
5	All emissions,radiated(<1G)	±4.68dB
6	All emissions,radiated(>1G)	±4.89dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Intelligent Robotic Trolley
Trade Name	N/A
Model Name	CT-2000;CT2000;CT2000-AA;CT2000-AB; CT2000-AC;CT2000-BA;CT2000-BB; CT2000-BC;CT2000-CA;CT2000-LJ; CT2000-MJ
OEM Brand/Model Name	N/A
Model Difference	All the model are the same circuit and RF module, except the appearance and colour .
Product Description	The EUT is a Intelligent Robotic Trolley Operation Frequency: 2403-2480 MHz Modulation Type: QPSK Antenna Designation: Printed ANT Antenna Gain(Peak) 1.0 dBi Out Power 99.43dBuV/m@3m
Channel List	Note 3
Power Source	DC Voltage supplied from battery
Power Rating	DC 24V by battery, Battery charging by adapter, Adapter: AC Power Input: 100-240V~, 50/60Hz, 1.4A Output: 29.4V ⎓1.8A
Connecting I/O Port(s)	Please refer to the User's Manual
Products Covered	N/A
EUT Modification(s)	N/A

Note:

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

2.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Printed Antenna	NA	1.0	Antenna

3.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
		27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

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2.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	TX Mode
Mode 2	Charge mode

For Conducted Emission	
Final Test Mode	Description
Mode 2	Charge mode

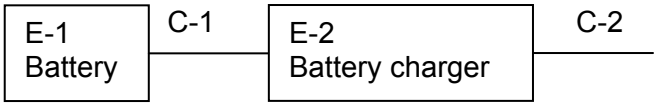
For Radiated Emission	
Final Test Mode	Description
Mode 1	TX Mode

Note:

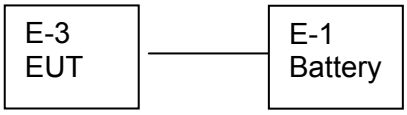
(1) The EUT use new battery.

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 1:



Mode 2:



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Battery	YingLiTe	6-QA-80(N80)12V80AH	SB1	
E-2	Battery charger	SANS	SSLC058V29	E32902144CR	
E-3	Intelligent Tracking Robot	N/A	CT-2000	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	100cm	
C-2	NO	NO	150cm	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	E4407B	160400005	Jul. 06. 2012
2	Test Receiver	R&S	ESPI	101318	Jul. 06. 2012
3	Bilog Antenna	TESEQ	CBL6111D	31216	Jul. 06. 2012
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	Jul. 06. 2012
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	Jul. 06. 2012
6	Horn Antenna	EM	EM-AH-10180	2011071402	Jul. 06. 2012
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	Jul. 06. 2012
8	Amplifier	EM	EM-30180	060538	Jul. 06. 2012
9	Loop Antenna	ARA	PLA-1030/B	1029	Jul. 06. 2012
10	Power Meter	R&S	NRVS	100696	Jul. 06. 2012

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Test Receiver	R&S	ESCI	101160	Jul. 06. 2012
2	LISN	R&S	ENV216	101313	Jul. 06. 2012
3	LISN	EMCO	3816/2	00042990	Jul. 06. 2012
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	Jul. 06. 2012
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	Jul. 06. 2012
6	Absorbing clamp	R&S	MOS-21	100423	Jul. 06. 2012

3. TEST RESULT

3.1 ANTENNA REQUIREMENT

3.1.1 STANDARD REQUIREMENT

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

3.1.2 EUT ANTENNA

The EUT antenna is integral Antenna. It comply with the standard requirement.

3.2 CONDUCTED EMISSION MEASUREMENT

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

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

0.15 -0.5			66 - 56 *	56 - 46 *	LP002.
0.50 -5.0			56.00	46.00	LP002.
5.0 -30.0			60.00	50.00	LP002.

Note:

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

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

The following table is the setting of the receiver

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

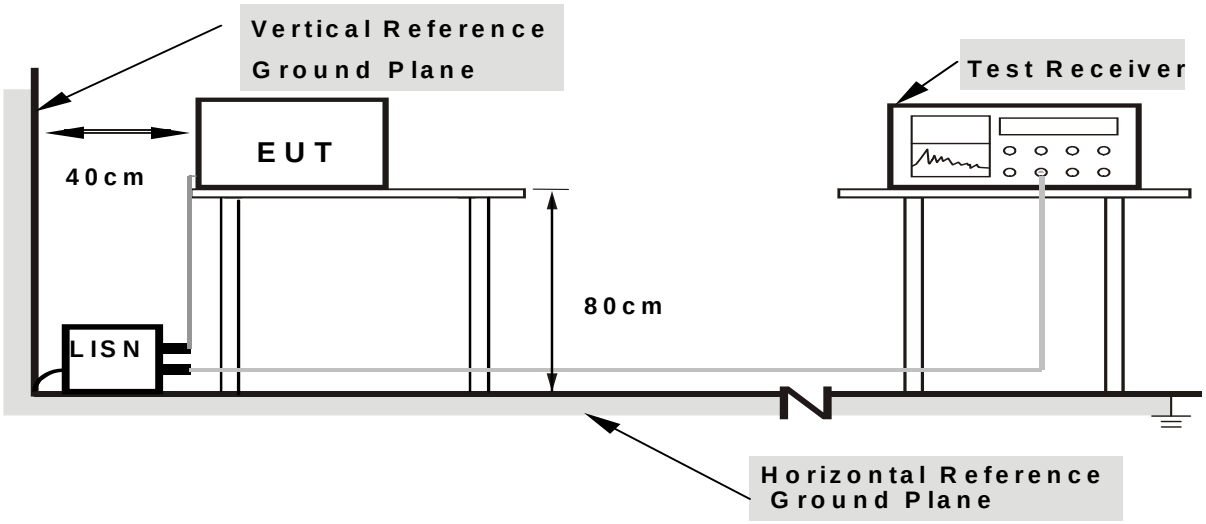
3.2.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 DEVIATION FROM TEST STANDARD

No deviation

3.2.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

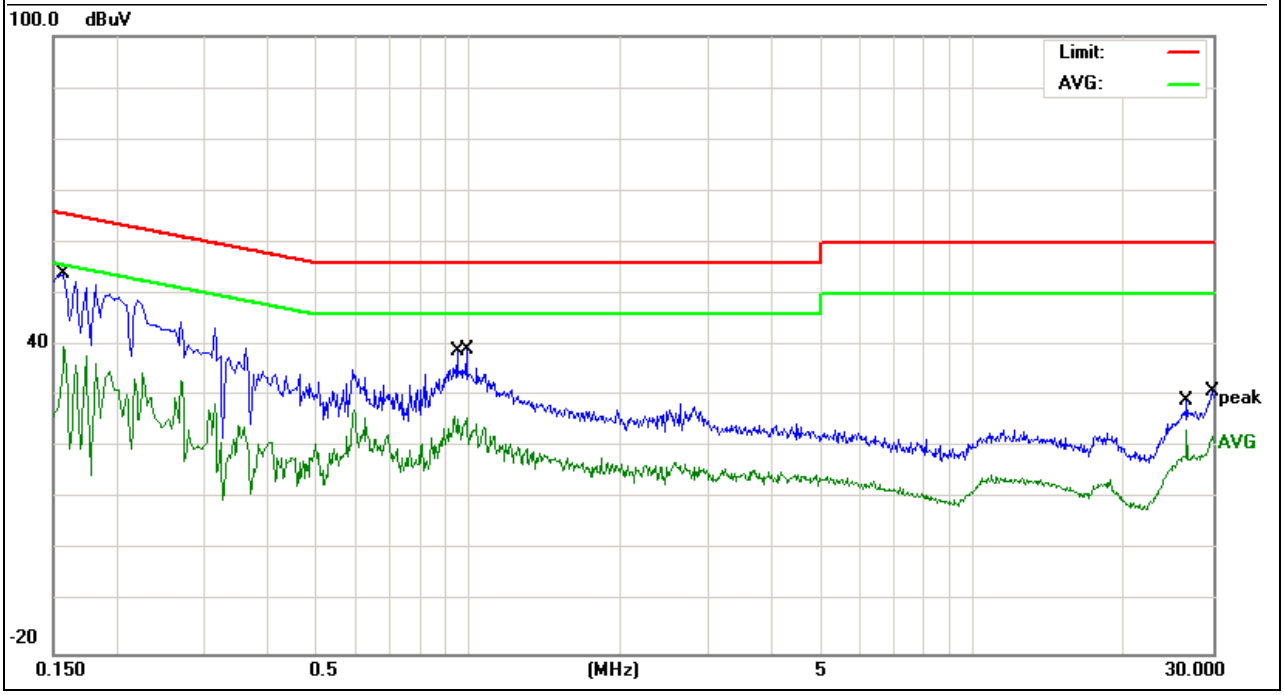
3.2.5 TEST RESULT

EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2011-12-10
Test Mode：	Charge mode	Phase：	Line
Test Voltage ：	DC 24V from adapter AC 120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
*0.1580	43.25	10.69	53.94	65.56	-11.62	QP
0.1580	29.20	10.69	39.89	55.56	-15.67	AVG
0.9420	15.77	10.41	26.18	46.00	-19.82	AVG
0.9940	28.75	10.41	39.16	56.00	-16.84	QP
26.6260	12.72	10.65	23.37	50.00	-26.63	AVG
29.9700	20.15	10.61	30.76	60.00	-29.24	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. '*' means the worst case

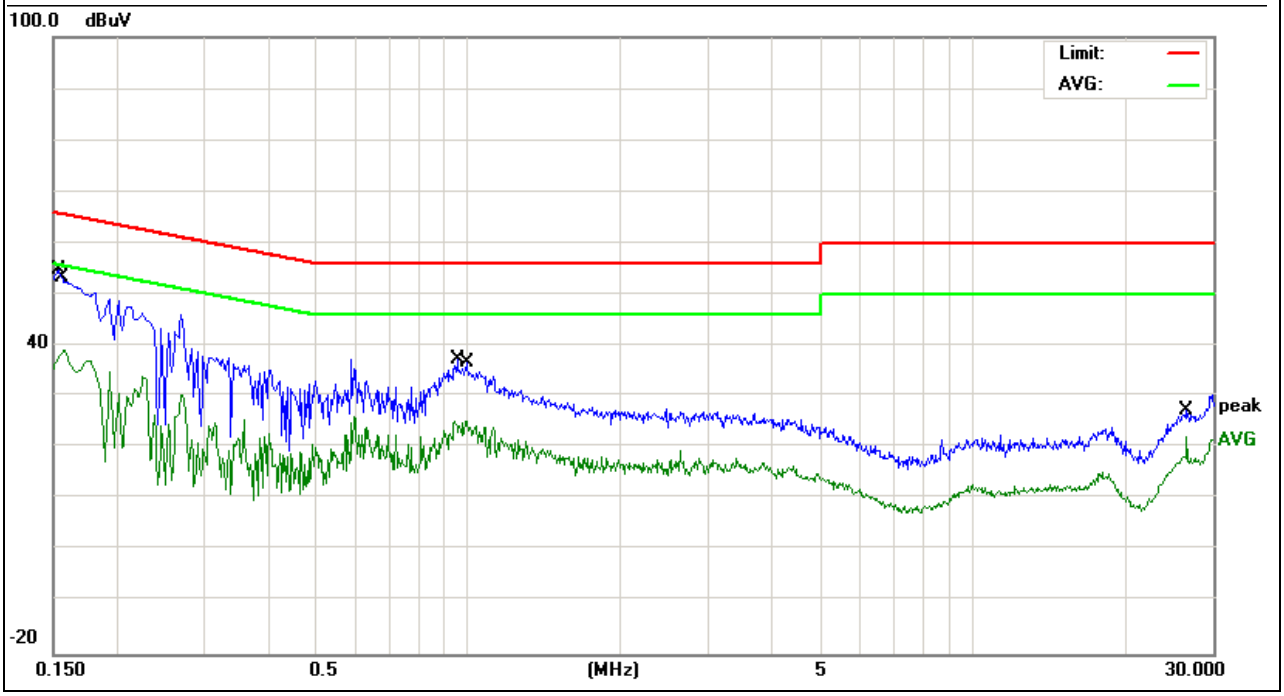


EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2011-12-10
Test Mode：	Charge mode	Phase：	Neutral
Test Voltage ：	DC 24V from adapter AC 120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
*0.1539	43.84	11.03	54.87	65.78	-10.91	QP
0.1580	28.69	10.56	39.25	55.56	-16.31	AVG
0.9500	26.88	10.44	37.32	56.00	-18.68	QP
0.9860	14.76	10.45	25.21	46.00	-20.79	AVG
26.6260	16.47	10.73	27.20	60.00	-32.80	QP
26.6260	11.48	10.73	22.21	50.00	-27.79	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. '*' means the worst case



3.3 RADIATED EMISSION MEASUREMENT

3.3.1 Radiated Emission Limits (FCC 15.209)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
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

Note:

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

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

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.249)

Frequency of Emission (MHz)	Field Strength of fundamental (millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
2400 - 2483.5	50	500

Notes:

(1) Emissions 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.

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

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.3.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. 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.
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.

Note:

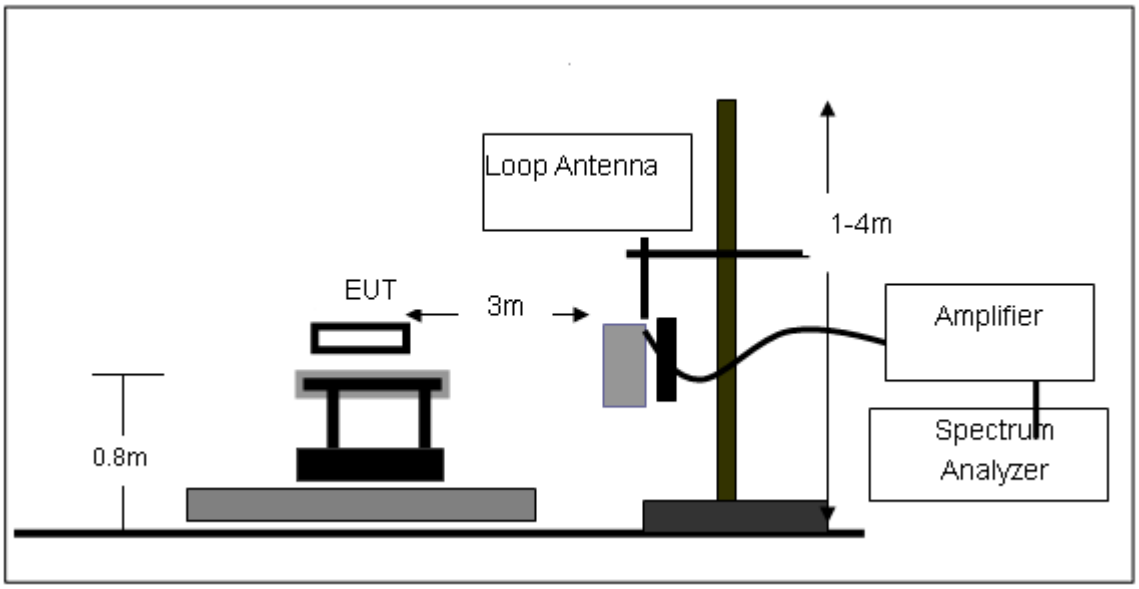
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

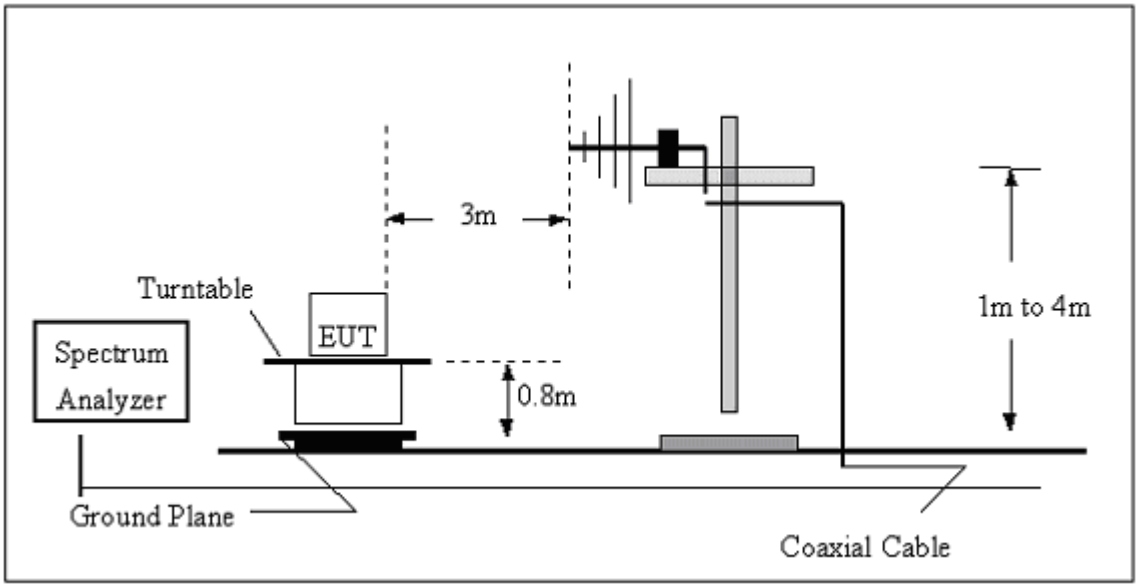
No deviation

3.3.4 TEST SETUP

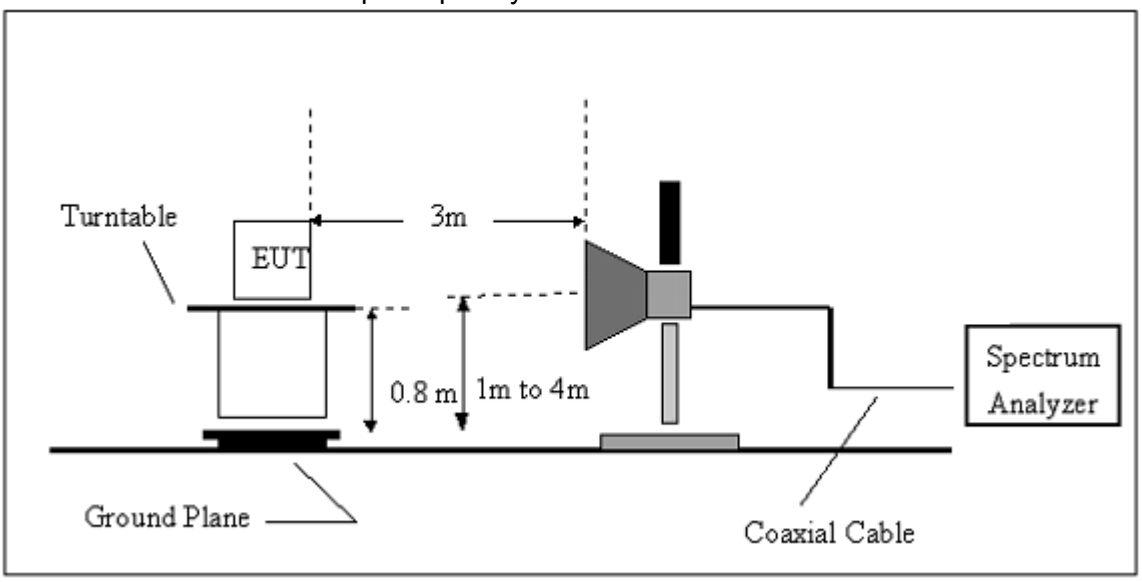
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 TEST RESULTS (BLOW 30MHz)

EUT：	Intelligent Robotic Trolley	Model Name. ：	CT-2000
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC24V by battery
Test Mode ：	TX	Polarization :	--

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

NOTE:

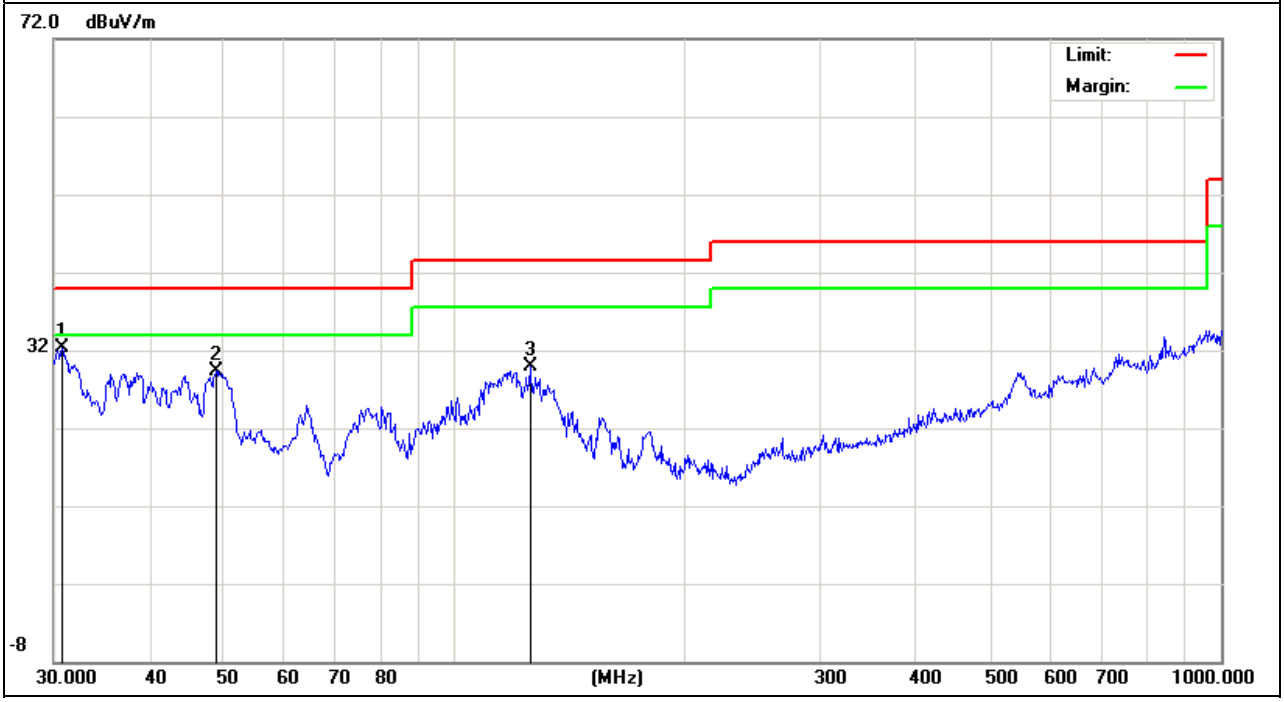
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =20 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.3.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	Charge Mode	Polarization：	Horizontal
Test Power ：	DC 24V from adapter AC 120V/60Hz		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
30.7455	14.36	17.96	32.32	40	-7.68	Quasi-Peak
48.8429	20.59	8.72	29.31	40	-10.69	Quasi-Peak
125.4457	17.9	11.91	29.81	43.5	-13.69	Quasi-Peak

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	Charge Mode	Polarization：	Vertical
Test Power ：	DC 24V from adapter AC 120V/60Hz		

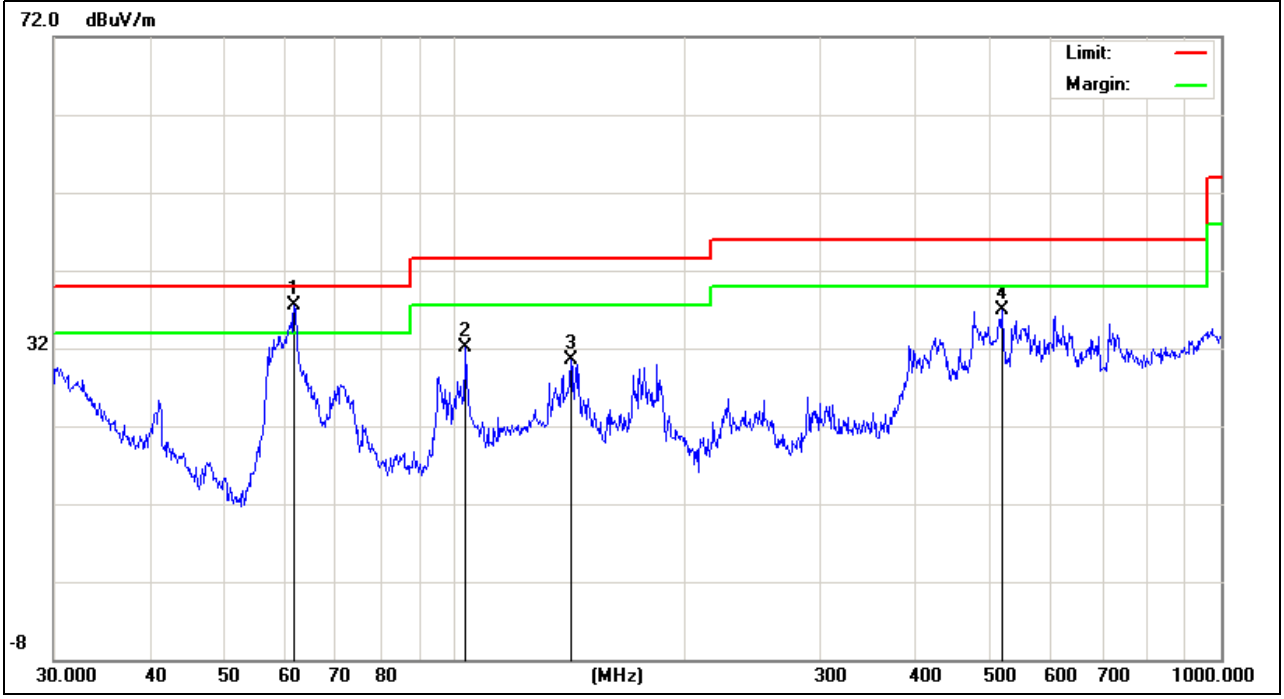
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
47.826	18.14	9.21	27.35	40	-12.65	Quasi-Peak
126.3286	22.78	11.9	34.68	43.5	-8.82	Quasi-Peak
177.5092	19.2	9.68	28.88	43.5	-14.62	Quasi-Peak

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX Mode	Polarization：	Horizontal
Test Power ：	DC 24V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
61.7781	32.26	5.19	37.45	40	-2.55	Quasi-Peak
103.4421	21.26	10.84	32.1	43.5	-11.4	Quasi-Peak
141.8262	18.67	11.93	30.6	43.5	-12.9	Quasi-Peak
517.248	17.55	19.42	36.97	46	-9.03	Quasi-Peak

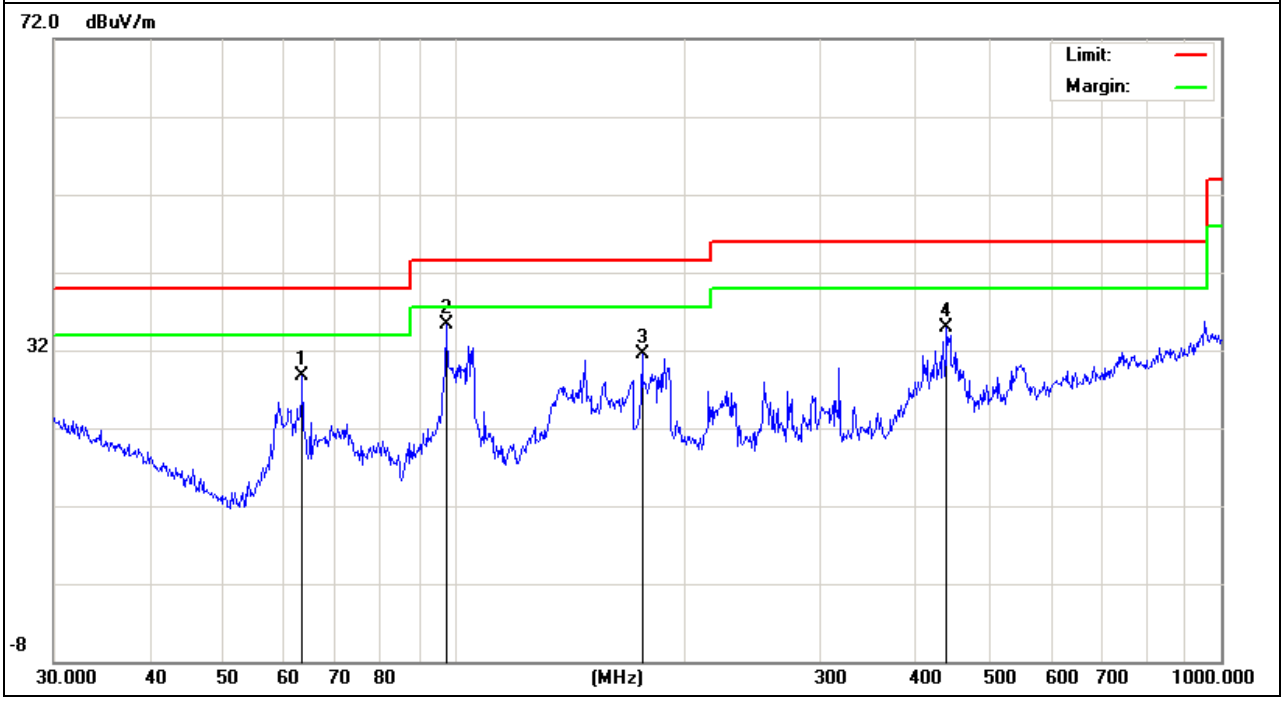
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX Mode	Polarization：	Vertical
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
63.3132	23.37	5.27	28.64	40	-11.36	Quasi-Peak
97.456	25.17	10.21	35.38	43.5	-8.12	Quasi-Peak
175.6516	21.75	9.69	31.44	43.5	-12.06	Quasi-Peak
438.6554	17.05	17.86	34.91	46	-11.09	Quasi-Peak

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



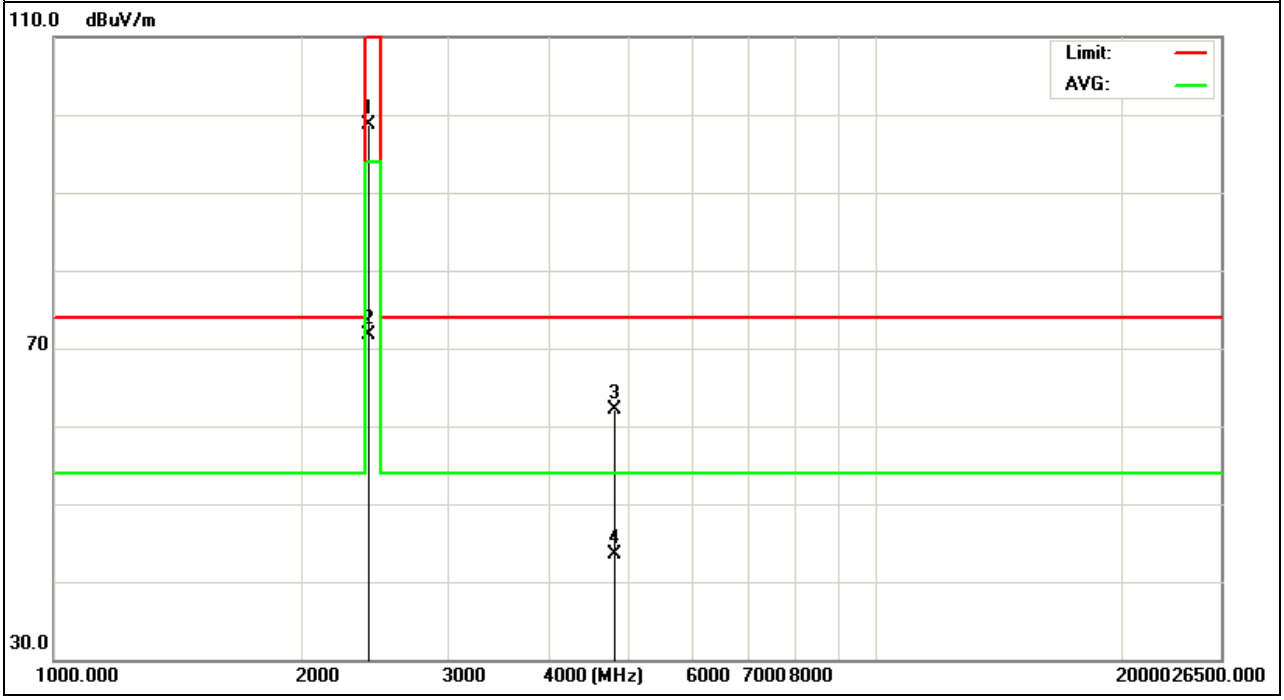
3.3.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX /2403MHz	Polarization：	Horizontal
Test Power ：	DC 24V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2403	116.24	-17.46	98.78	114.0 0	-15.22	peak
2403	89.24	-17.46	71.78	94	-22.22	AVG
4806	70.23	-8.16	62.07	74	-11.93	peak
4806	51.76	-8.16	43.6	54	-10.4	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

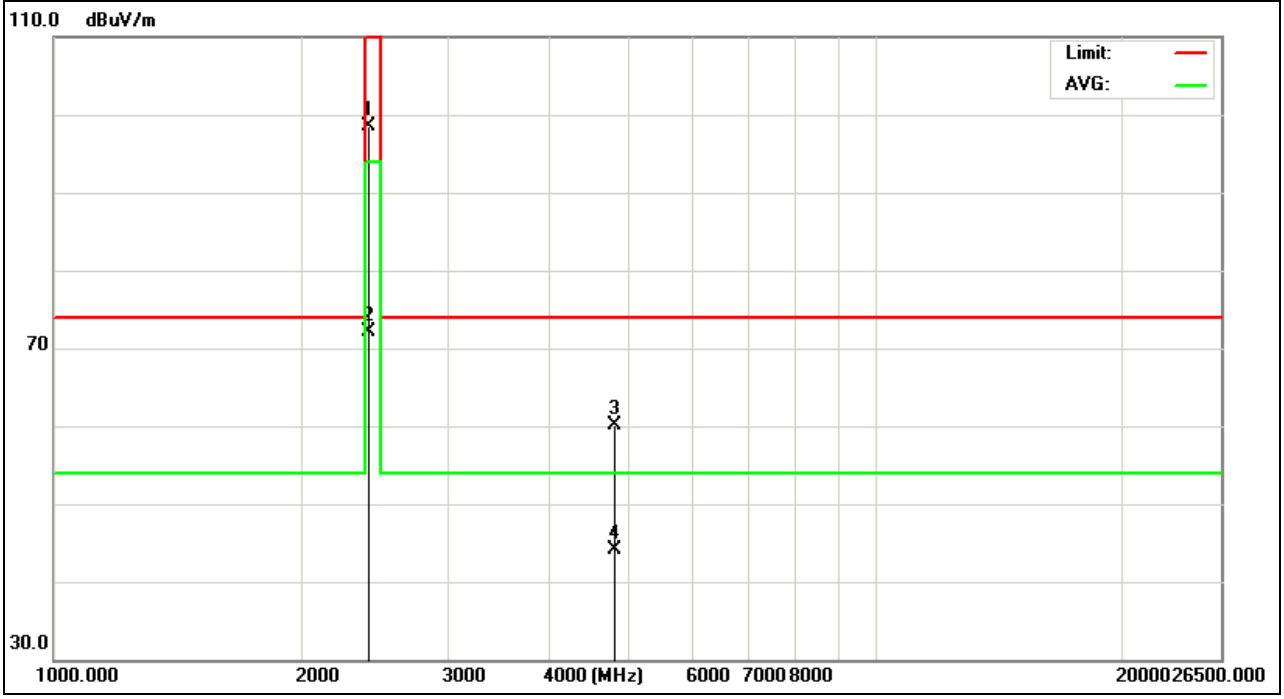


EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX /2403MHz	Polarization：	Vertical
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2403	115.89	-17.46	98.43	114.0 0	-15.57	peak
2403	89.65	-17.46	72.19	94	-21.81	AVG
4806	68.23	-8.16	60.07	74	-13.93	peak
4806	52.25	-8.16	44.09	54	-9.91	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

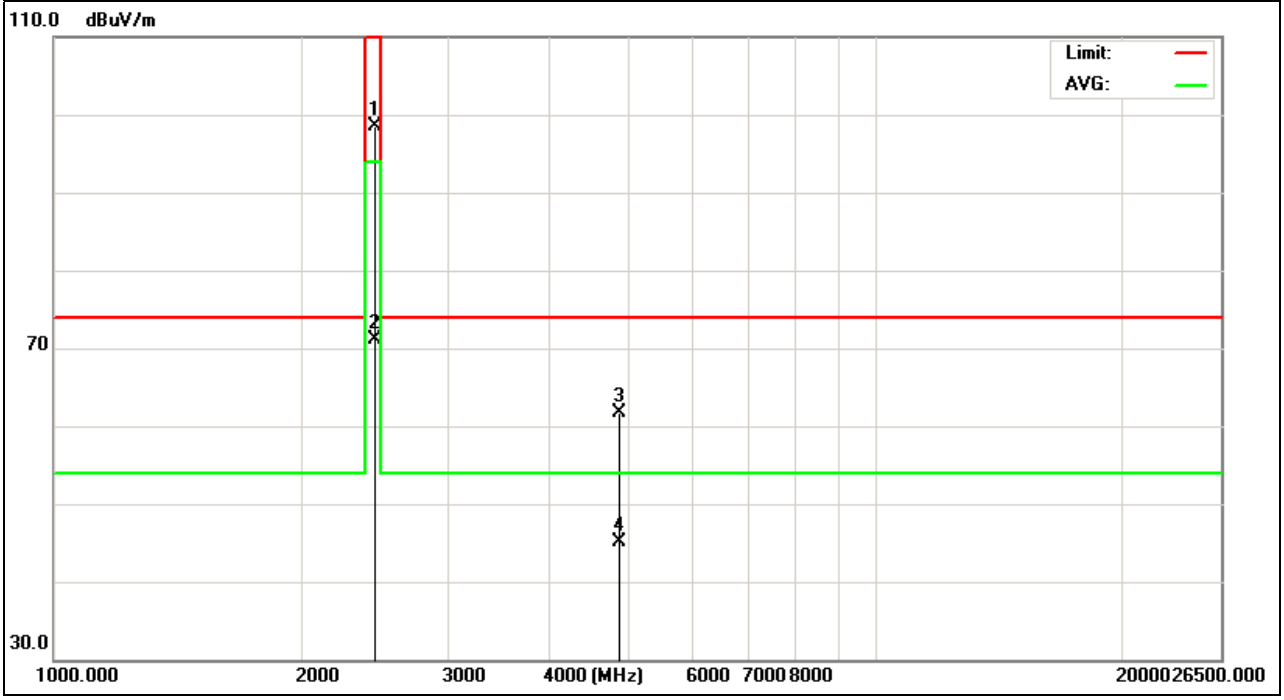


EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX /2450MHz	Polarization：	Horizontal
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2450	116.01	-17.44	98.57	114.0 0	-15.43	peak
2450	88.45	-17.44	71.01	94	-22.99	AVG
4900	69.99	-8.32	61.67	74	-12.33	peak
4900	53.35	-8.32	45.03	54	-8.97	AVG

Remark:

2. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

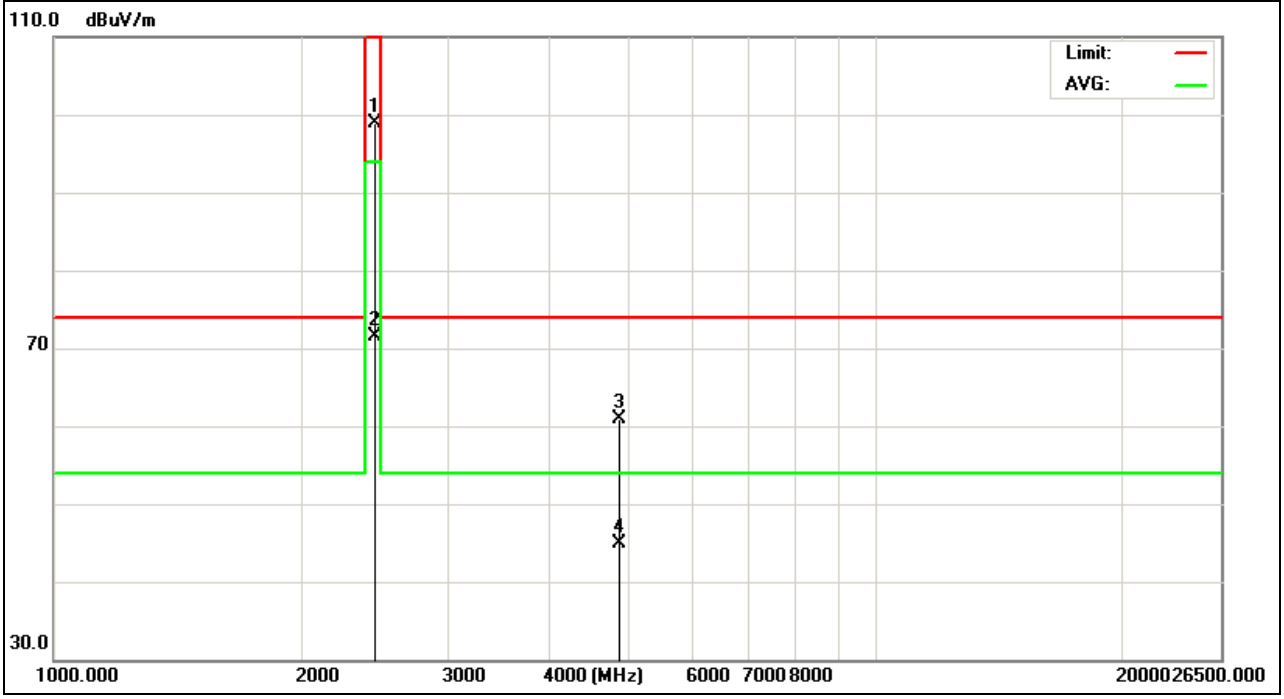


EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX /2450MHz	Polarization：	Vertical
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2450	116.36	-17.44	98.92	114.0 0	-15.08	peak
2450	88.89	-17.44	71.45	94	-22.55	AVG
4900	69.21	-8.32	60.89	74	-13.11	peak
4900	53.25	-8.32	44.93	54	-9.07	AVG

Remark:

2. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

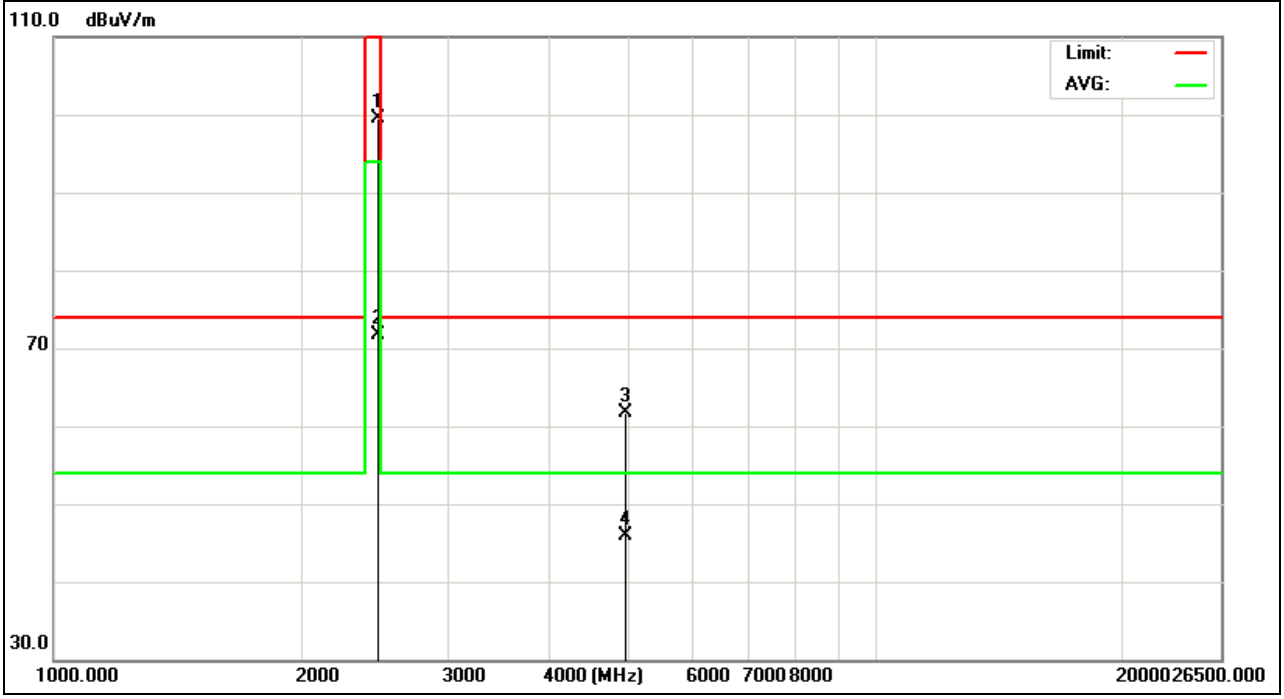


EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX /2480MHz	Polarization：	Horizontal
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2480	116.78	-17.35	99.43	114.0 0	-14.57	peak
2480	88.98	-17.35	71.63	94	-22.37	AVG
4960	69.92	-8.17	61.75	74	-12.25	peak
4960	53.98	-8.17	45.81	54	-8.19	AVG

Remark:

3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

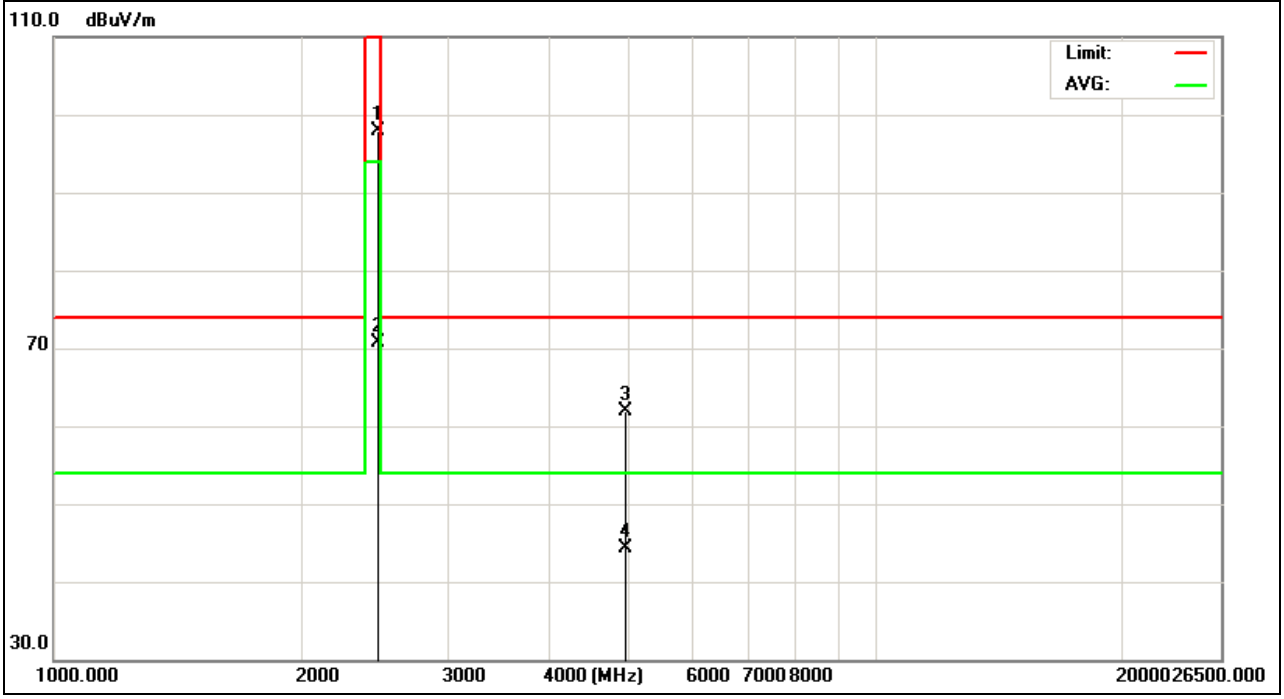


EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX /2480MHz	Polarization：	Vertical
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2480	115.21	-17.35	97.86	114.0 0	-16.14	peak
2480	88.09	-17.35	70.74	94	-23.26	AVG
4960	70.13	-8.17	61.96	74	-12.04	peak
4960	52.57	-8.17	44.4	54	-9.6	AVG

Remark:

3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

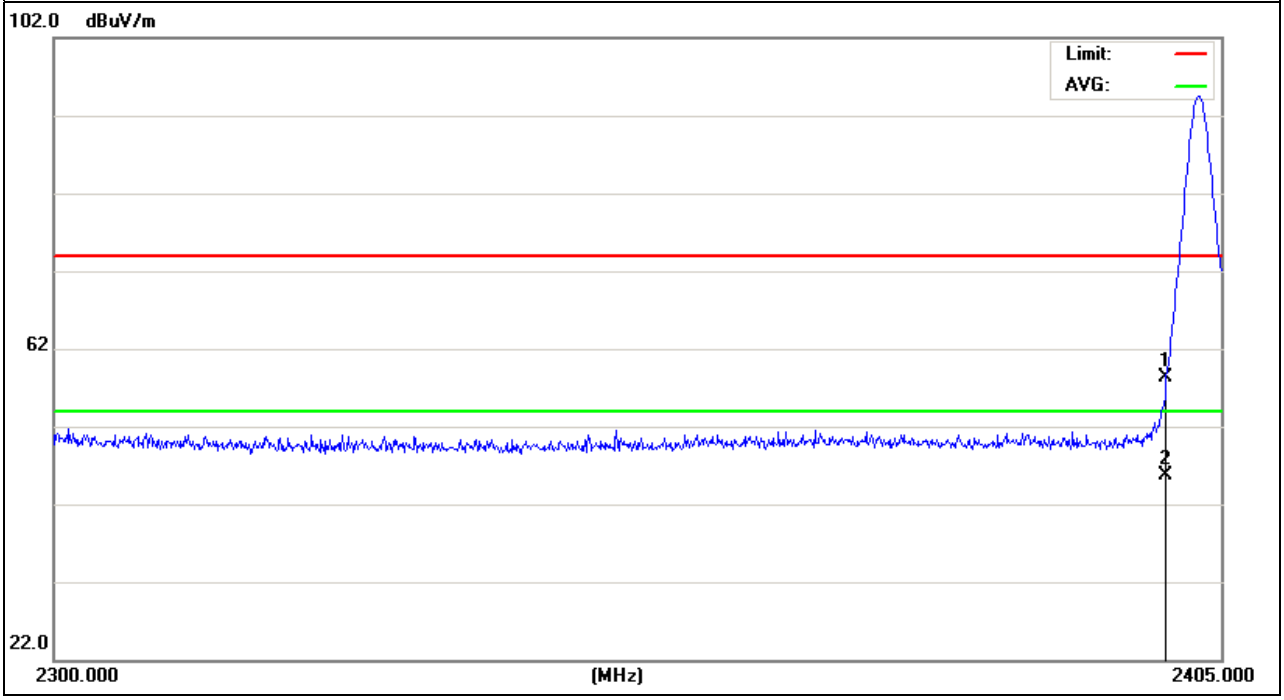


Band Edge Emission:

EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX 2403MHz	Polarization：	Vertical
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2400	75.31	-17.00	58.31	74	-15.69	peak
2400	62.62	-17.00	45.62	54	-8.38	AVG

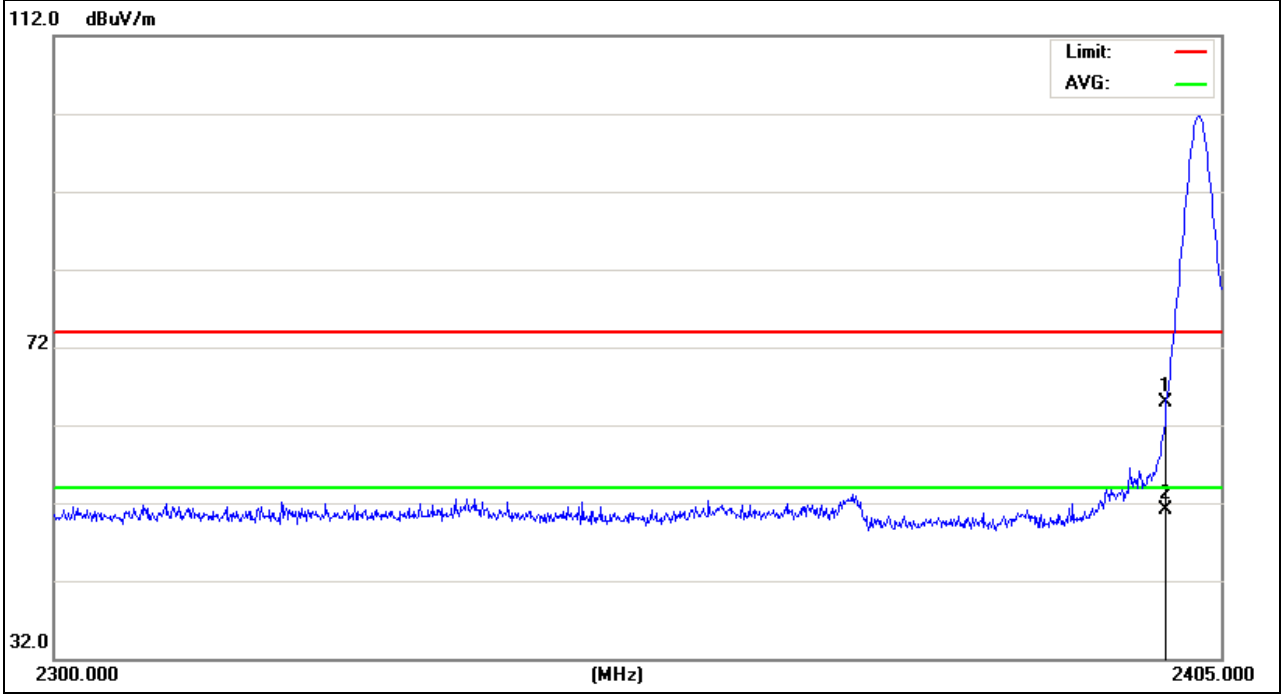
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX 2403MHz	Polarization：	Horizontal
Test Power ：	DC 24V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2400	71.81	-17.00	64.81	74	-9.19	peak
2400	68.19	-17.00	51.19	54	-2.81	AVG

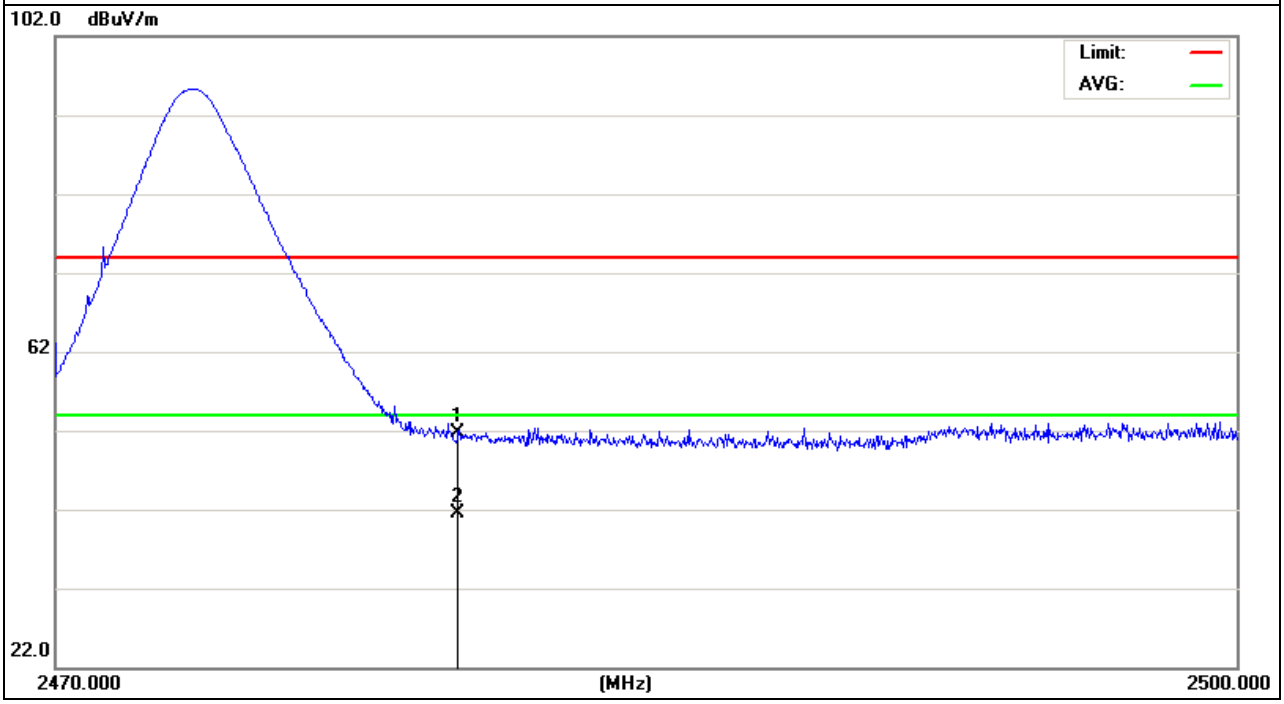
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX 2480MHz	Polarization：	Vertical
Test Power ：	DC 24V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	69.10	-18.02	50.98	74	-23.02	peak
2483.5	59.11	-18.02	41.09	54	-12.91	AVG

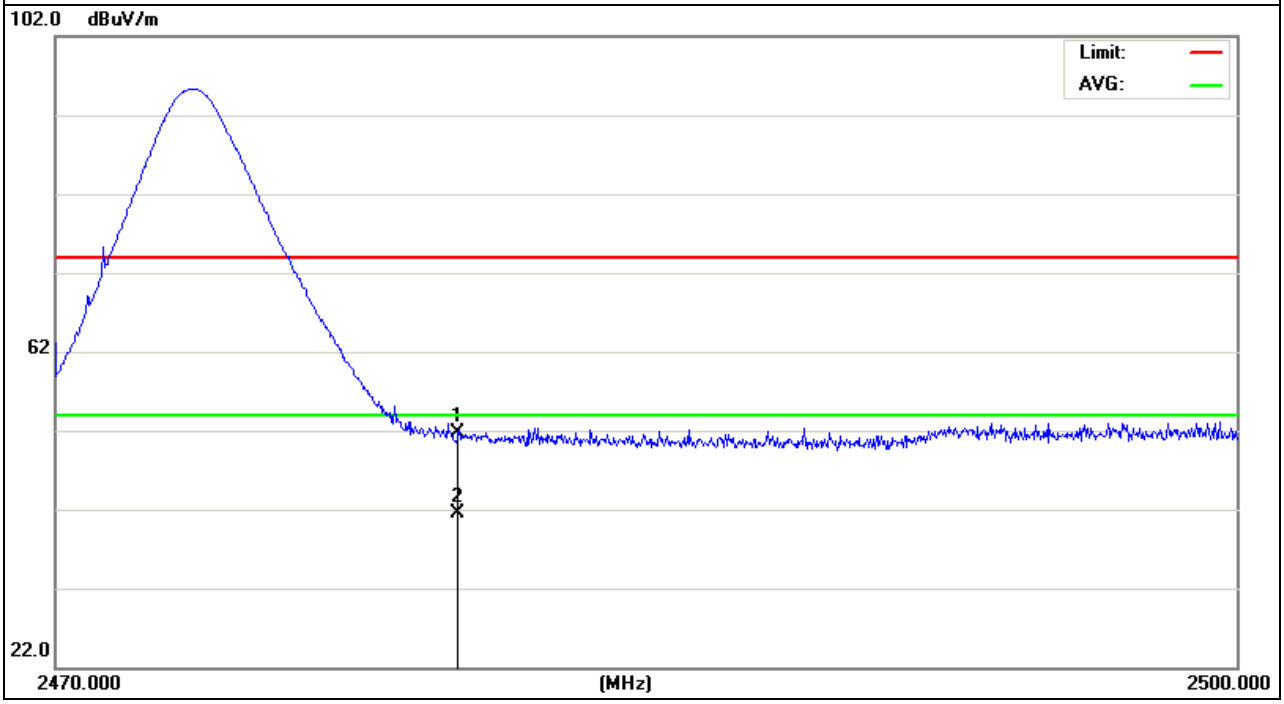
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2011-12-10
Test Mode ：	TX 2480MHz	Polarization：	Horizontal
Test Power ：	DC 24V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2483.5	70.41	-18.02	52.39	74	-21.61	peak
2483.5	59.89	-18.02	41.87	54	-12.13	AVG

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



4. BANDWIDTH TEST

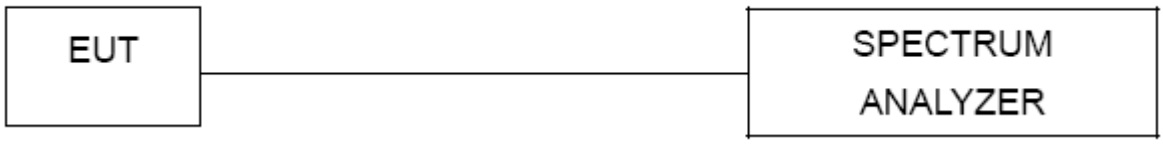
4.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW≧RBW, Sweep time = Auto.

4.2 DEVIATION FROM STANDARD

No deviation.

4.3 TEST SETUP

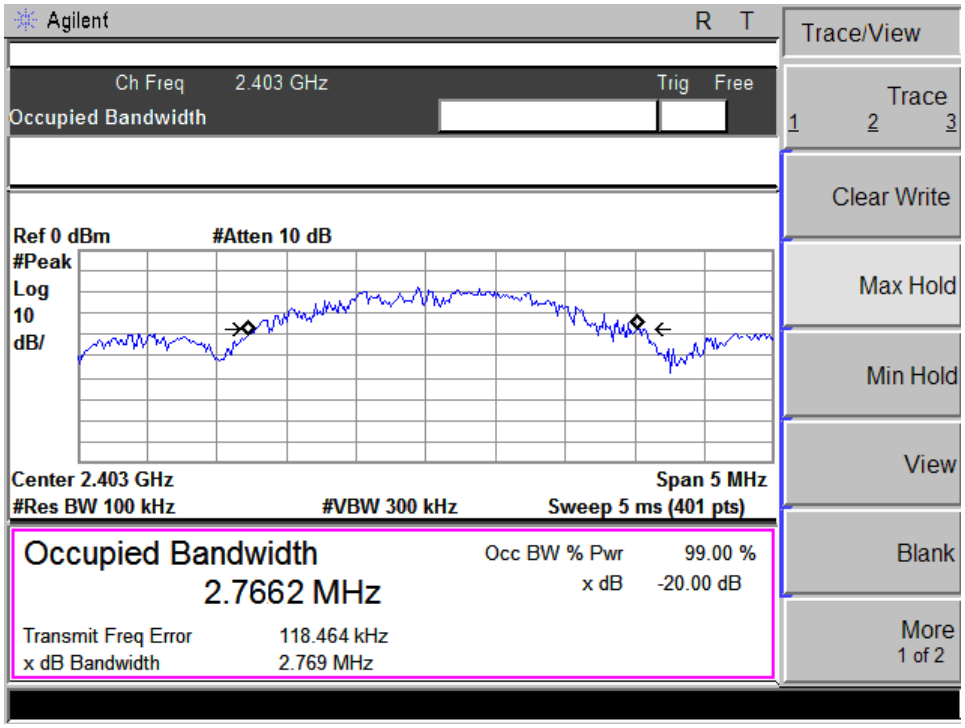


4.4 TEST RESULTS

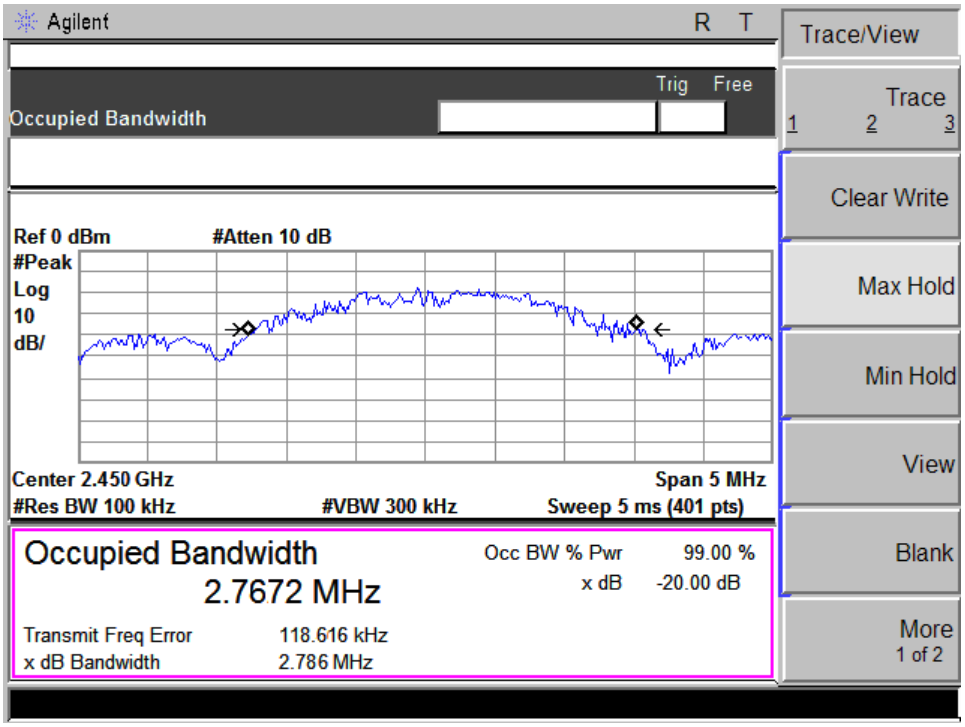
EUT：	Intelligent Robotic Trolley	Model Name ：	CT-2000
Temperature：	26 ℃	Relative Humidity：	53%
Pressure：	1020 hPa	Test Power ：	DC 24V
Test Mode ：	TX		

Frequency (MHz)	99% Bandwidth(MHz)	20dB Bandwidth(MHz)
2403	2.766	2.769
2450	2.767	2.786
2480	2.782	2.768

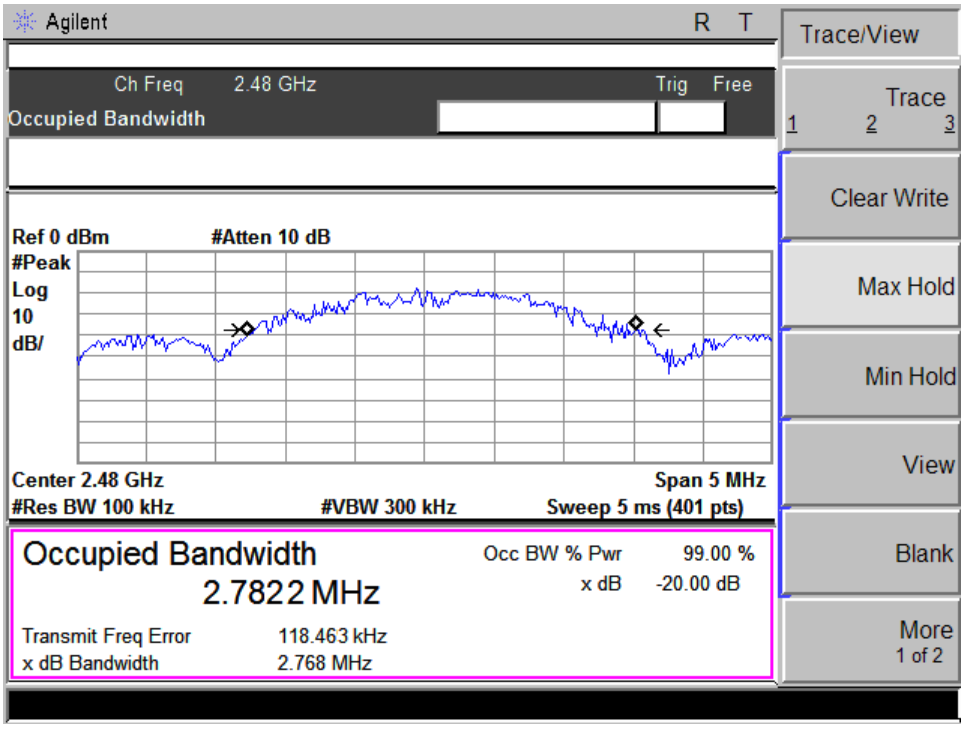
The Channel:2403MHz



The Channel:2450MHz



The Channel:2480MHz



5. EUT TEST PHOTO

Radiated Measurement Photos