FCC RADIO TEST REPORT
FCC ID:2AGTK-9407

Product：	UHF Bib Tag Reader
Trade Name：	N/A
Model Name：	TUHF-READER-9407
Serial Model：	N/A
Report No.：	NTEK-2015NT1009826F

Prepared for

The Active Network, Ltd. (Xian)

D201 Qinfengge, No. 68 Kejier Rd, Xian, China

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name	:	The Active Network, Ltd. (Xian)
Address	:	D201 Qinfengge, No. 68 Kejier Rd, Xian, China
Manufacture's Name	:	The Active Network, Ltd. (Xian)
Address	:	D201 Qinfengge, No. 68 Kejier Rd, Xian, China

Product description

Product name	:	UHF Bib Tag Reader
Model and/or type reference	:	TUHF-READER-9407
Serial Model：		N/A
Rating(s)	:	DC 12V
Standards	:	FCC Part15.249 01 Oct. 2015
Test procedure		ANSI C63.10-2013

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

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Date of Test	:	
Date (s) of performance of tests	:	09 Oct. 2014 ~25 Nov. 2014
Date of Issue	:	25 Nov. 2014
Test Result	:	**Pass**

Testing Engineer : Susan

(Susan Su)

Technical Manager : Brown Lu

(Brown Lu)

Authorized Signatory : Sam . Chen

(Sam Chen)

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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	
15.205	Band Edge 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 No.:238937; IC Registration No.:9270A-1
CNAS Registration No.:L5516

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	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	UHF Bib Tag Reader
Trade Name	N/A
Model Name	TUHF-READER-9407
Serial Model	N/A
Model Difference	N/A
Product Description	The EUT is a UHF Bib Tag Reader Operation Frequency: 912.5 MHz -917.5MHz Modulation Type: ASK Antenna Designation: Plate Antenna Antenna Gain(Peak) 5.0 dBi Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Channel List	Please refer to the Note 2.
Adapter	N/A
Battery	DC 12V,7.2Ah/20HR

Note:

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

2.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	912.5	07	915.5
02	913	08	916
03	913.5	09	916.5
04	914	10	917
05	914.5	11	917.5
06	915	--	--

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Plate Antenna	N/A	5.0	Antenna

2.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	CH 01
Mode 2	CH 11
Mode 3	Link mode

For Conducted Emission	
Final Test Mode	Description
Mode 3	Link mode

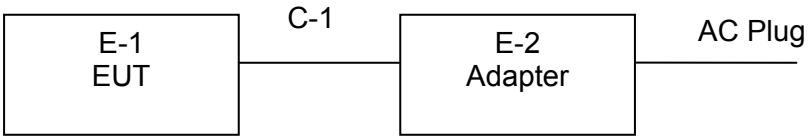
For Radiated Emission	
Final Test Mode	Description
Mode 1	CH 01
Mode 2	CH 11

Note:

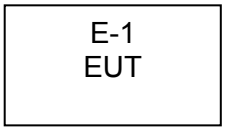
(1) The measurements are performed at the highest, lowest channels.

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Spurious Emission Test



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	UHF Bib Tag Reader	N/A	TUHF-READER-9407	N/A	EUT
E-2	Adapter	N/A	AD1	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.3m	

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.

2.4.1 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. 2016
2	Test Receiver	R&S	ESPI	101318	Jul. 06. 2016
3	Bilog Antenna	TESEQ	CBL6111D	31216	Jul. 06. 2016
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	Jul. 06. 2016
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	Jul. 06. 2016
6	Horn Antenna	EM	EM-AH-10180	2011071402	Jul. 06. 2016
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	Jul. 06. 2016
8	Amplifier	EM	EM-30180	060538	Jul. 06. 2016
9	Loop Antenna	ARA	PLA-1030/B	1029	Jul. 06. 2016
10	Power Meter	R&S	NRVS	100696	Jul. 06. 2016

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Test Receiver	R&S	ESCI	101160	Jul. 06. 2016
2	LISN	R&S	ENV216	101313	Jul. 06. 2016
3	LISN	EMCO	3816/2	00042990	Jul. 06. 2016
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	Jul. 06. 2016
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	Jul. 06. 2016
6	Absorbing clamp	R&S	MOS-21	100423	Jul. 06. 2016

3. ANTENNA REQUIREMENT

3.1 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.

3.2 EUT ANTENNA

The EUT antenna is non-standard SAM antenna connector, details to see internal photo, It comply with the standard requirement.

3.3 CONDUCTED EMISSION MEASUREMENT

3.3.1 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

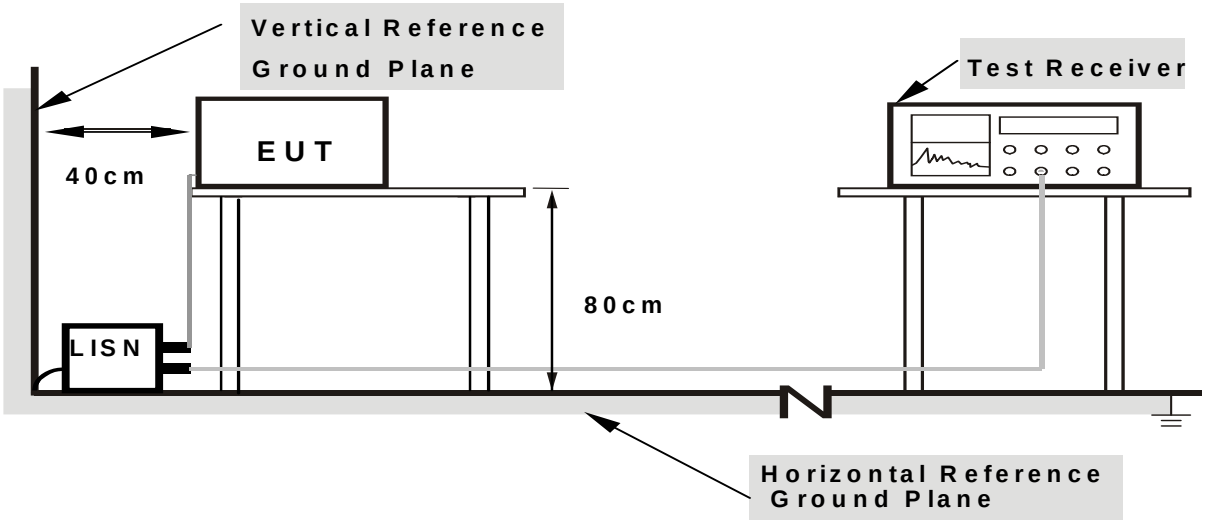
3.3.2 TEST PROCEDURE

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.

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 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

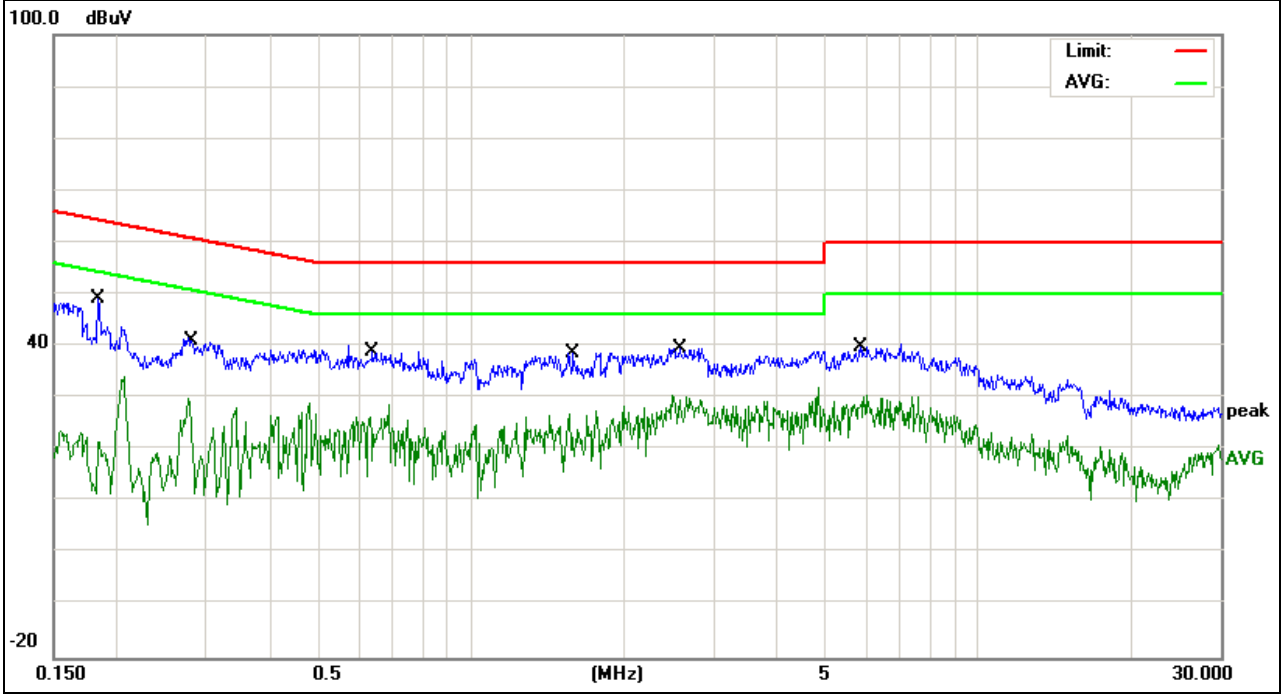
3.2.5 TEST RESULT

EUT：	UHF Bib Tag Reader	Model Name. ：	TUHF-READER-9407
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 13.8V form Adapter AC 120V/60Hz	Test Mode：	Mode 3

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1833	39.64	9.46	49.10	64.33	-15.23	QP
0.1833	12.15	9.46	21.61	54.33	-32.72	AVG
0.2802	31.66	9.44	41.10	60.81	-19.71	QP
0.2802	19.39	9.44	28.83	50.81	-21.98	AVG
0.6380	29.66	9.44	39.10	56.00	-16.90	QP
0.6380	16.90	9.44	26.34	46.00	-19.66	AVG
1.5859	29.35	9.45	38.80	56.00	-17.20	QP
1.5859	9.52	9.45	18.97	46.00	-27.03	AVG
2.5698	30.23	9.47	39.70	56.00	-16.30	QP
2.5698	18.75	9.47	28.22	46.00	-17.78	AVG
5.8539	30.40	9.50	39.90	60.00	-20.10	QP
5.8539	16.80	9.50	26.30	50.00	-23.70	AVG

Remark:

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

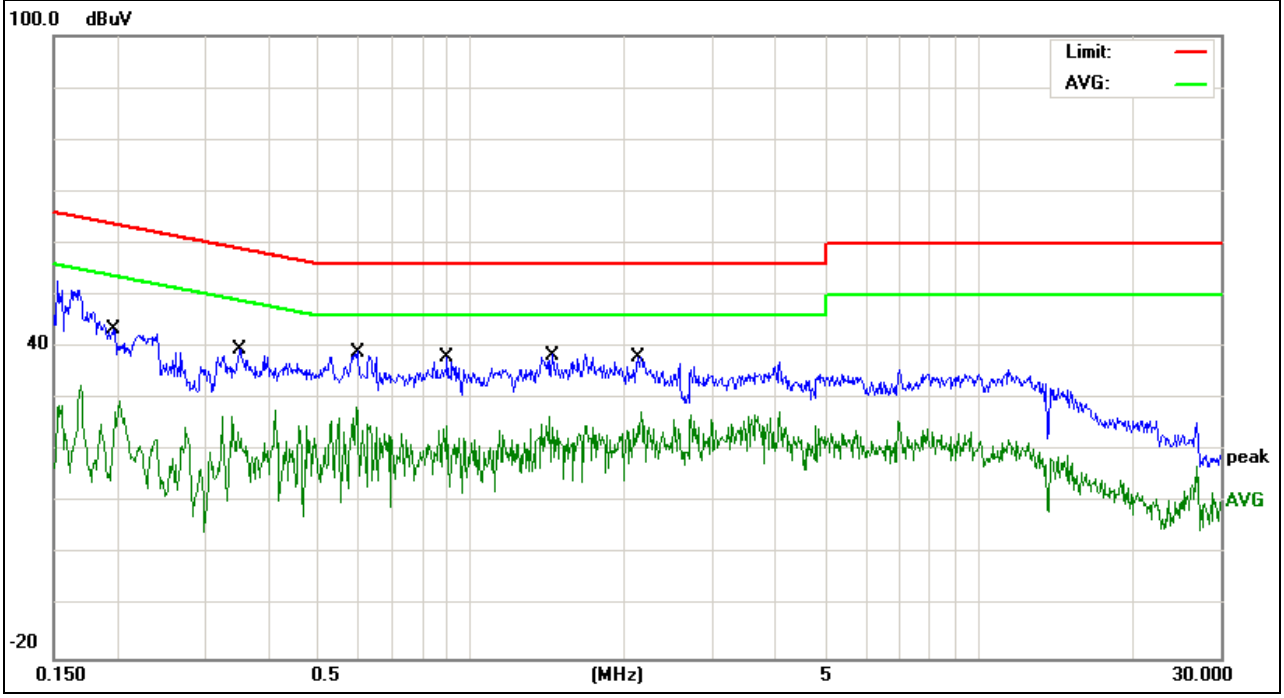


EUT：	UHF Bib Tag Reader	Model Name. ：	TUHF-READER-9407
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 13.8V form Adapter AC 120V/60Hz	Test Mode：	Mode 3

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1985	33.54	9.46	43.00	63.67	-20.67	QP
0.1985	18.17	9.46	27.63	53.67	-26.04	AVG
0.3497	30.26	9.44	39.70	58.97	-19.27	QP
0.3497	14.10	9.44	23.54	48.97	-25.43	AVG
0.5947	29.65	9.45	39.10	56.00	-16.90	QP
0.5947	5.93	9.45	15.38	46.00	-30.62	AVG
0.8980	28.66	9.44	38.10	56.00	-17.90	QP
0.8980	8.59	9.44	18.03	46.00	-27.97	AVG
1.4415	29.05	9.45	38.50	56.00	-17.50	QP
1.4415	15.21	9.45	24.66	46.00	-21.34	AVG
2.1379	28.64	9.46	38.10	56.00	-17.90	QP
2.1379	12.81	9.46	22.27	46.00	-23.73	AVG

Remark:

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

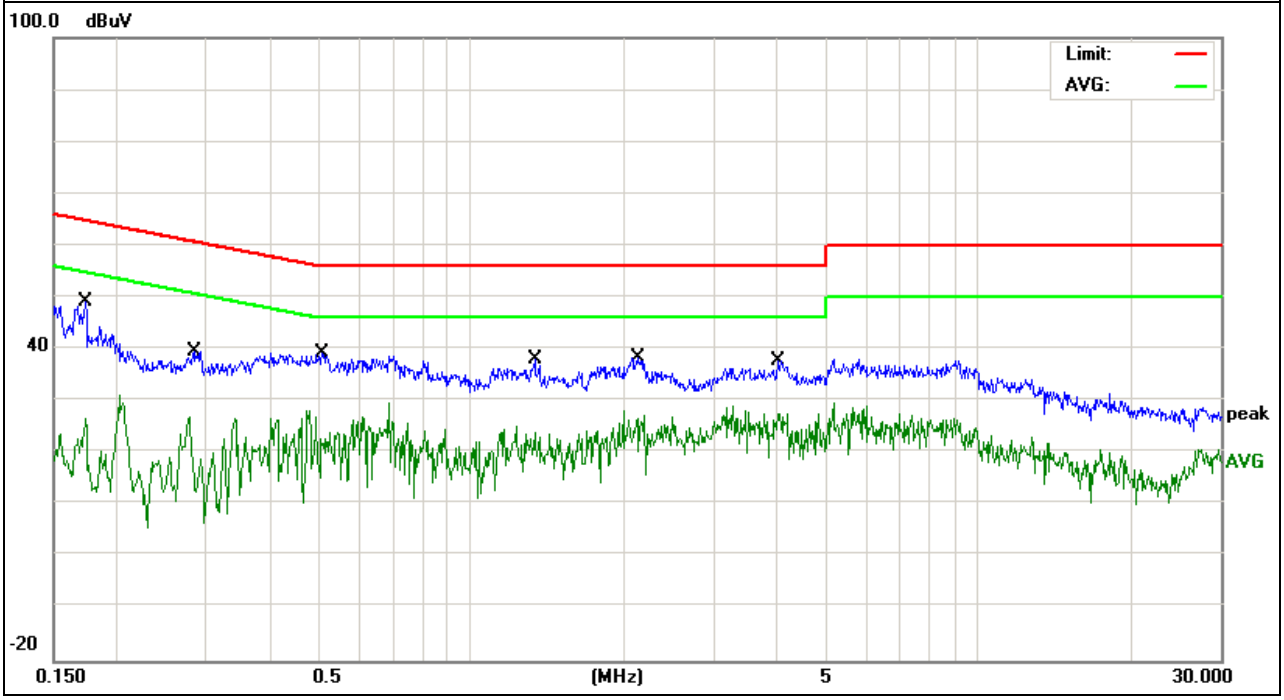


EUT：	UHF Bib Tag Reader	Model Name. ：	TUHF-READER-9407
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 13.8V form Adapter AC 240V/60Hz	Test Mode：	Mode 3

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1728	39.74	9.46	49.20	64.82	-15.62	QP
0.1728	17.20	9.46	26.66	54.82	-28.16	AVG
0.2857	30.26	9.44	39.70	60.65	-20.95	QP
0.2857	17.42	9.44	26.86	50.65	-23.79	AVG
0.5100	29.74	9.46	39.20	56.00	-16.80	QP
0.5100	18.68	9.46	28.14	46.00	-17.86	AVG
1.3340	28.75	9.45	38.20	56.00	-17.80	QP
1.3340	11.67	9.45	21.12	46.00	-24.88	AVG
2.1259	28.94	9.46	38.40	56.00	-17.60	QP
2.1259	14.78	9.46	24.24	46.00	-21.76	AVG
4.0179	28.43	9.47	37.90	56.00	-18.10	QP
4.0179	17.43	9.47	26.90	46.00	-19.10	AVG

Remark:

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

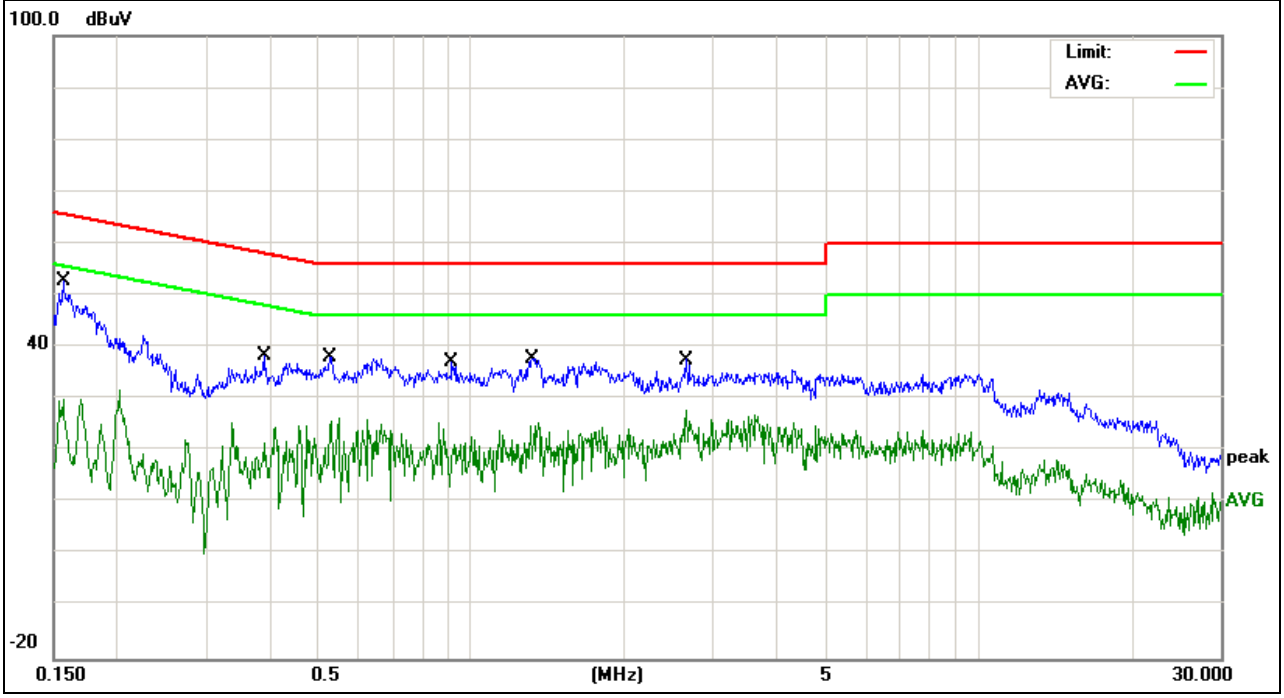


EUT：	UHF Bib Tag Reader	Model Name. ：	TUHF-READER-9407
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 13.8V form Adapter AC 240V/60Hz	Test Mode：	Mode 3

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1564	43.44	9.46	52.90	65.65	-12.75	QP
0.1564	20.60	9.46	30.06	55.65	-25.59	AVG
0.3899	28.96	9.44	38.40	58.06	-19.66	QP
0.3899	12.01	9.44	21.45	48.06	-26.61	AVG
0.5260	28.74	9.46	38.20	56.00	-17.80	QP
0.5260	16.31	9.46	25.77	46.00	-20.23	AVG
0.9180	27.76	9.44	37.20	56.00	-18.80	QP
0.9180	10.07	9.44	19.51	46.00	-26.49	AVG
1.3180	28.45	9.45	37.90	56.00	-18.10	QP
1.3180	15.26	9.45	24.71	46.00	-21.29	AVG
2.6538	28.13	9.47	37.60	56.00	-18.40	QP
2.6538	18.42	9.47	27.89	46.00	-18.11	AVG

Remark:

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



3.4 RADIATED EMISSION MEASUREMENT

3.4.1 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
Frequency (MHz)	Limit (dBuV)	
30~88	40	3
88~216	43.5	3
216~960	46	3
960 -10000	54.00	3
*902 - 928	94.00	3

Note:

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

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

(3) *Note: This is the limit for the fundamental frequency.

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.249)

Frequency of Emission (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
902-928	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

3.4.2 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 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 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 for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
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

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

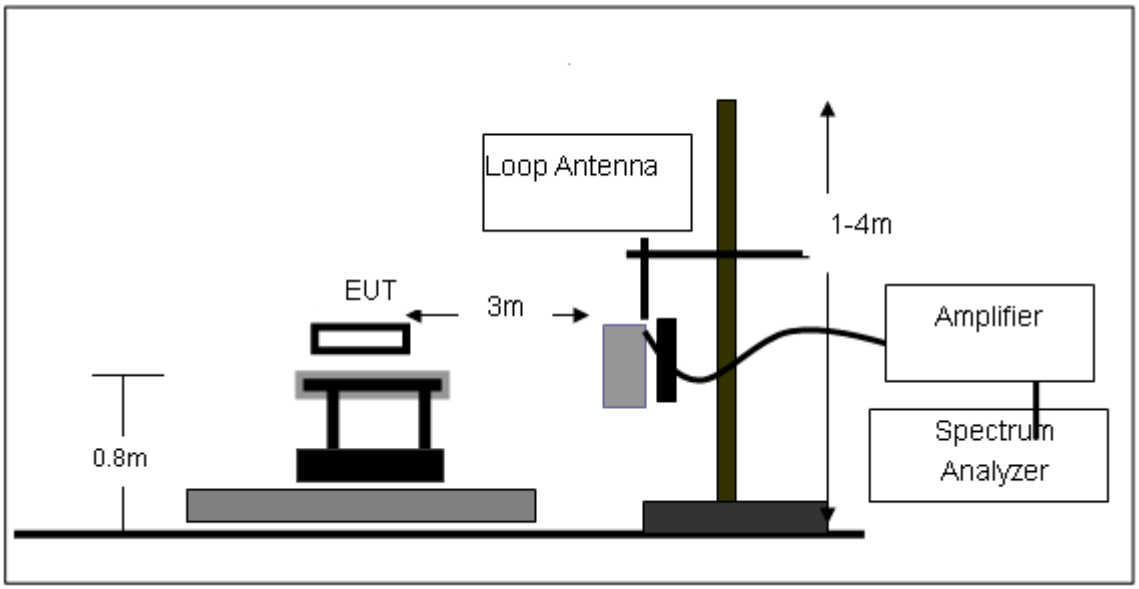
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Peak	100 kHz	100 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

3.4.3 DEVIATION FROM TEST STANDARD

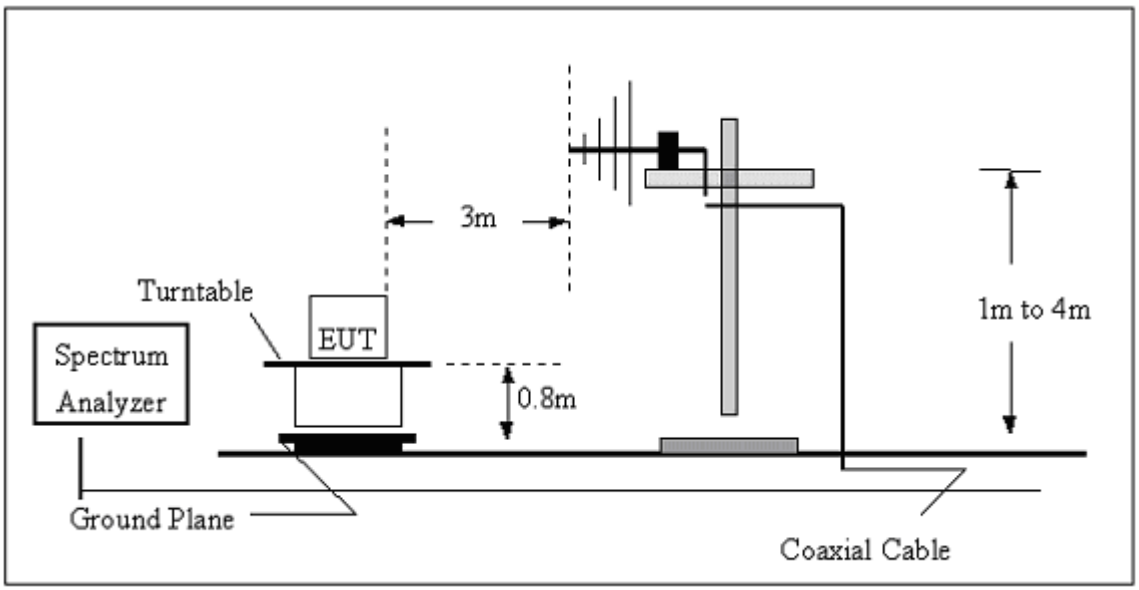
No deviation

3.4.4 TEST SETUP

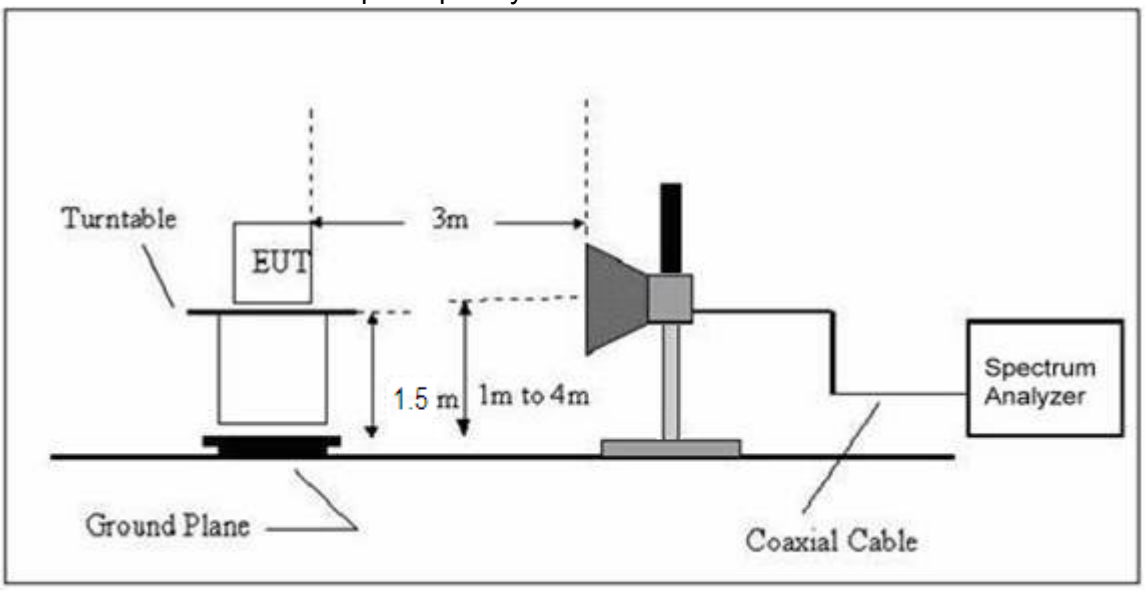
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.4.5 TEST RESULTS (BLOW 30MHz)

EUT：	UHF Bib Tag Reader	Model Name. ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX	Polarization :	--

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

NOTE:

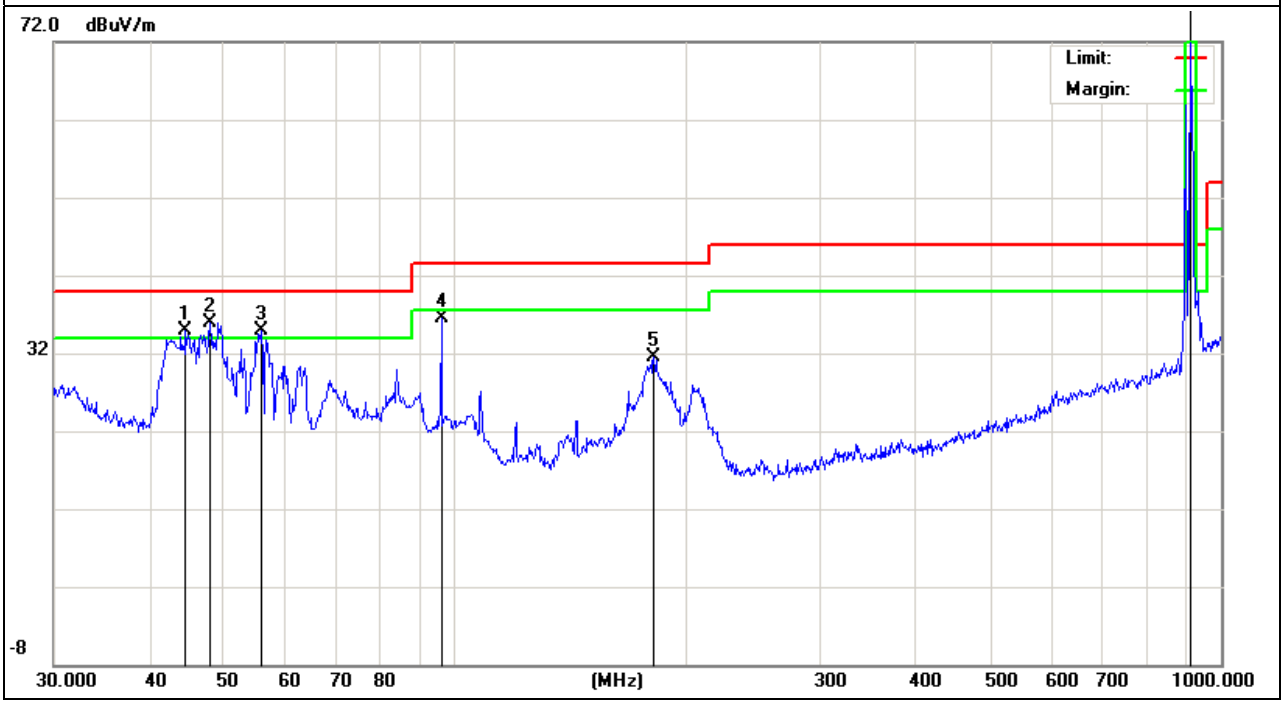
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =20 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.4.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-912.5MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
44.5867	22.91	12.06	34.97	40.00	-5.03	QP
47.9940	26.04	9.88	35.92	40.00	-4.08	QP
56.0007	28.11	6.70	34.81	40.00	-5.19	QP
96.0986	26.27	10.16	36.43	43.50	-7.07	QP
181.9200	19.70	11.87	31.57	43.50	-11.93	QP
912.8618	64.90	24.60	89.50	94.00	-4.50	QP

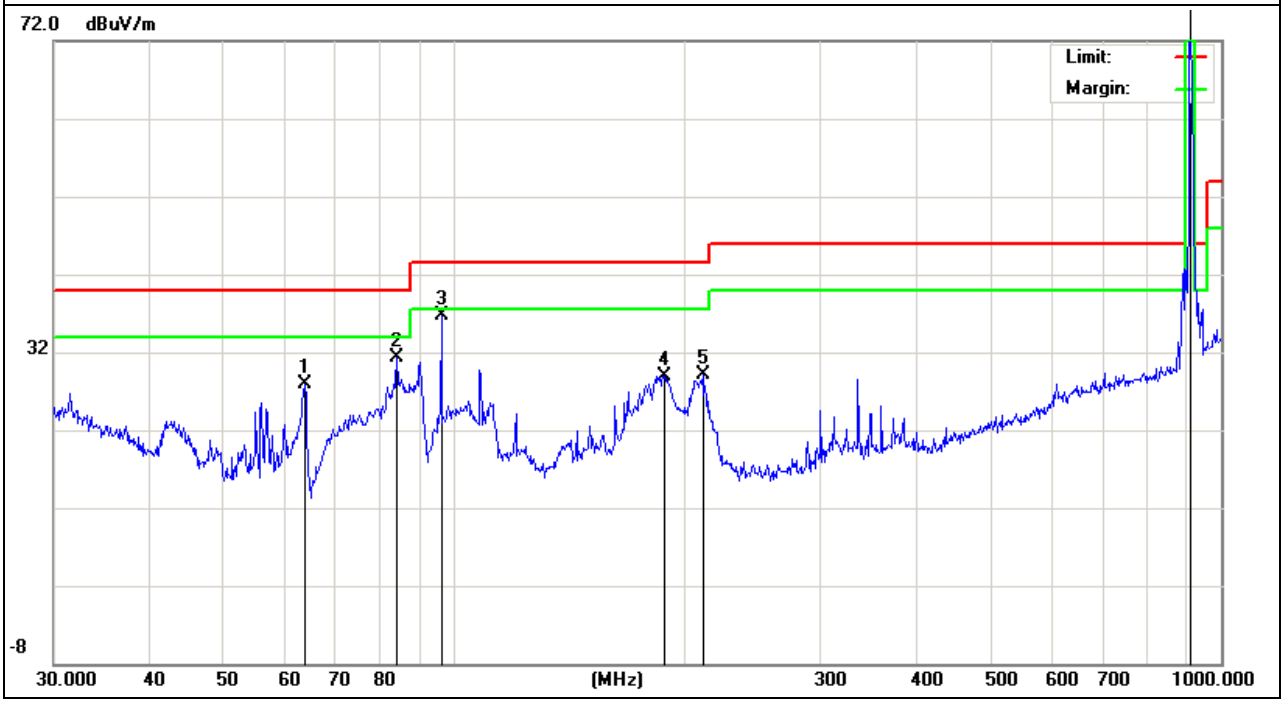
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-912.5MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
63.7588	22.33	5.66	27.99	40.00	-12.01	QP
84.1099	22.13	9.14	31.27	40.00	-8.73	QP
96.0986	26.54	10.16	36.70	43.50	-6.80	QP
187.7529	17.38	11.52	28.90	43.50	-14.60	QP
210.7860	18.08	11.02	29.10	43.50	-14.40	QP
912.8618	65.60	24.60	90.20	94.00	-3.80	QP

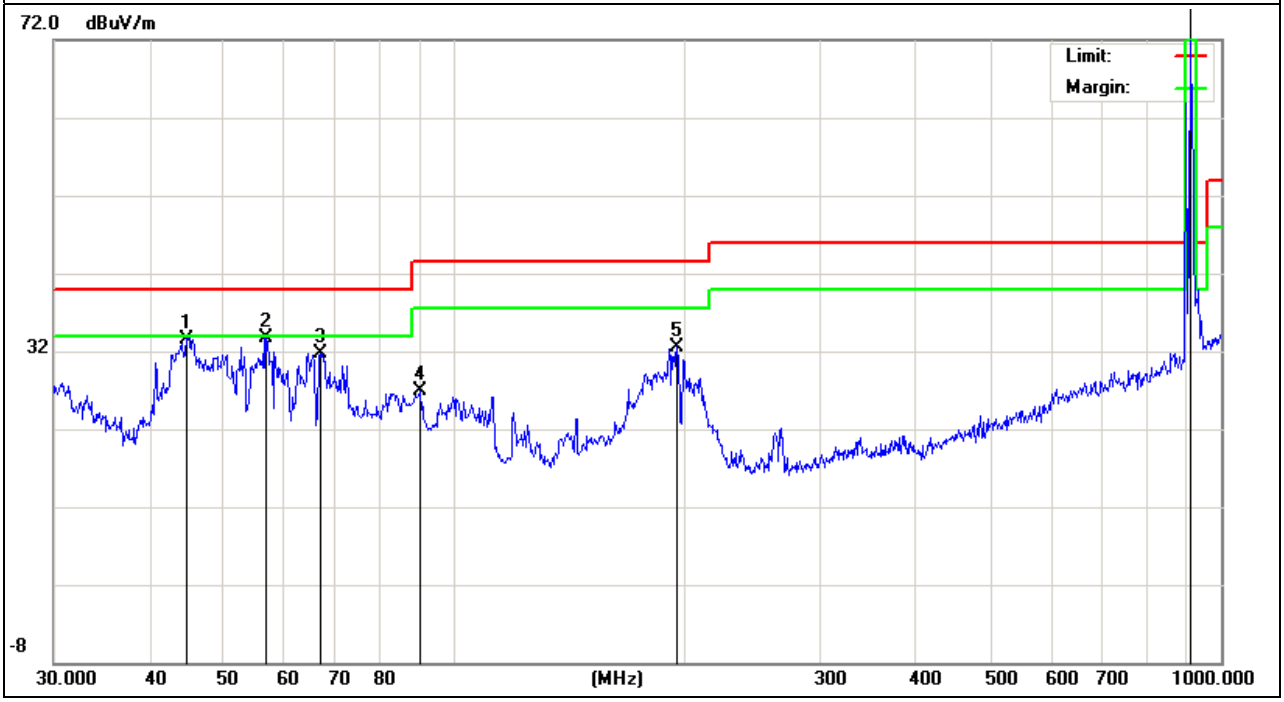
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-917.5MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
44.7433	21.71	11.89	33.60	40.00	-6.40	QP
56.7916	27.21	6.49	33.70	40.00	-6.30	QP
66.7325	24.71	6.99	31.70	40.00	-8.30	QP
90.2205	17.15	9.71	26.86	43.50	-16.64	QP
195.1365	21.17	11.43	32.60	43.50	-10.90	QP
912.8618	65.30	24.60	89.90	94.00	-4.10	QP

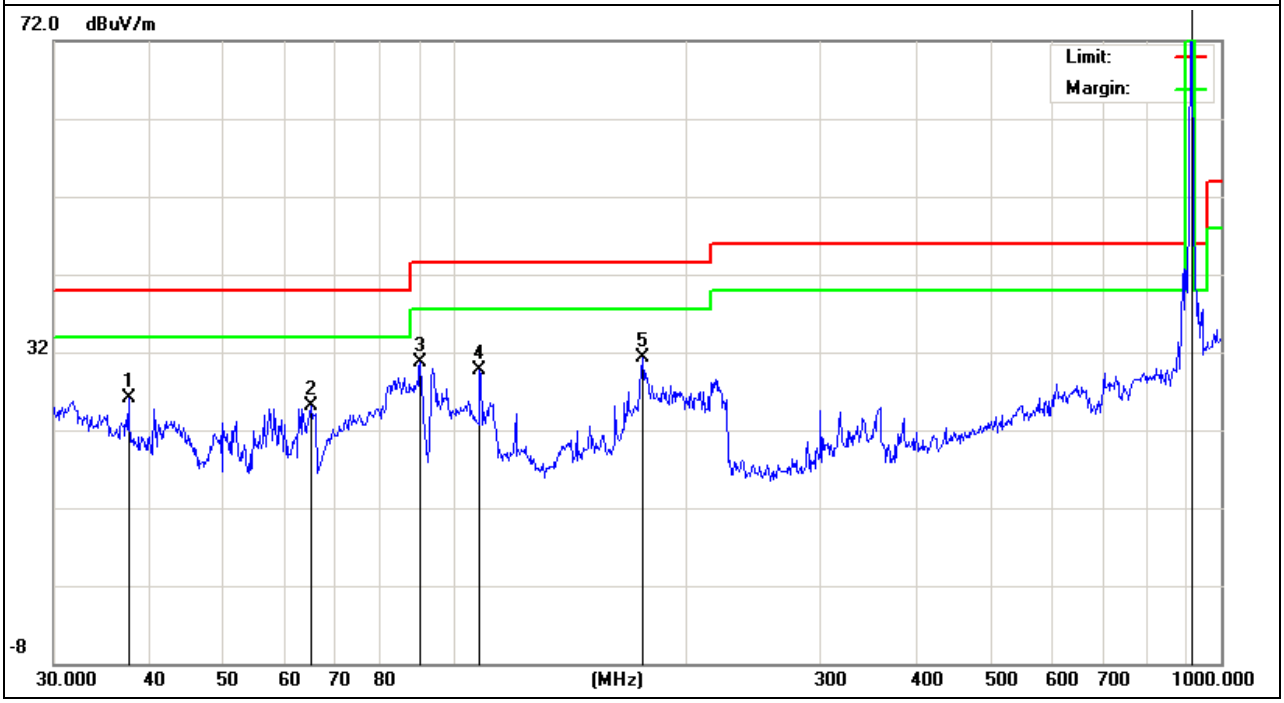
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-917.5MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
37.5478	10.09	16.01	26.10	40.00	-13.90	QP
64.8863	19.24	5.96	25.20	40.00	-14.80	QP
90.2205	20.91	9.71	30.62	43.50	-12.88	QP
107.8876	19.55	10.25	29.80	43.50	-13.70	QP
176.2684	19.09	12.21	31.30	43.50	-12.20	QP
916.0687	65.89	24.71	90.60	94.00	-3.40	QP

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

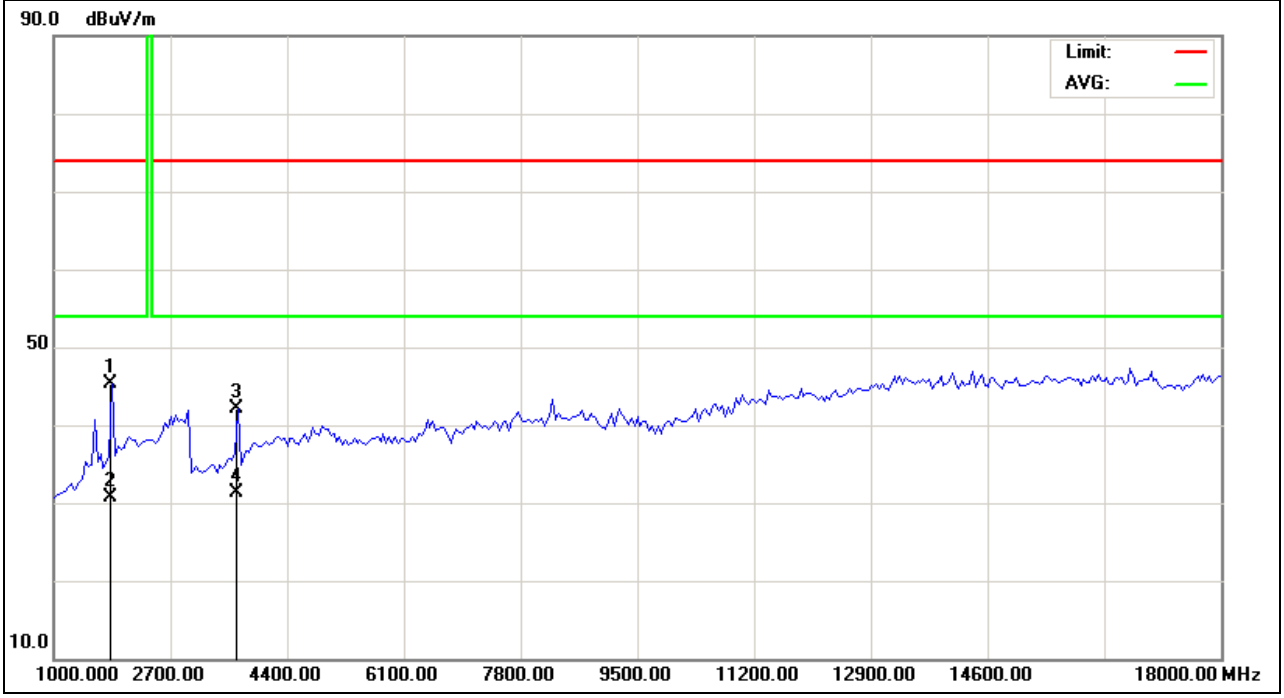


3.4.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-912.5MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1825.12	56.14	-10.76	45.38	74.00	-28.62	peak
1825.12	41.52	-10.76	30.76	54.00	-23.24	AVG
3657.50	47.05	-4.89	42.16	74.00	-31.84	peak
3657.50	36.16	-4.89	31.27	54.00	-22.73	AVG

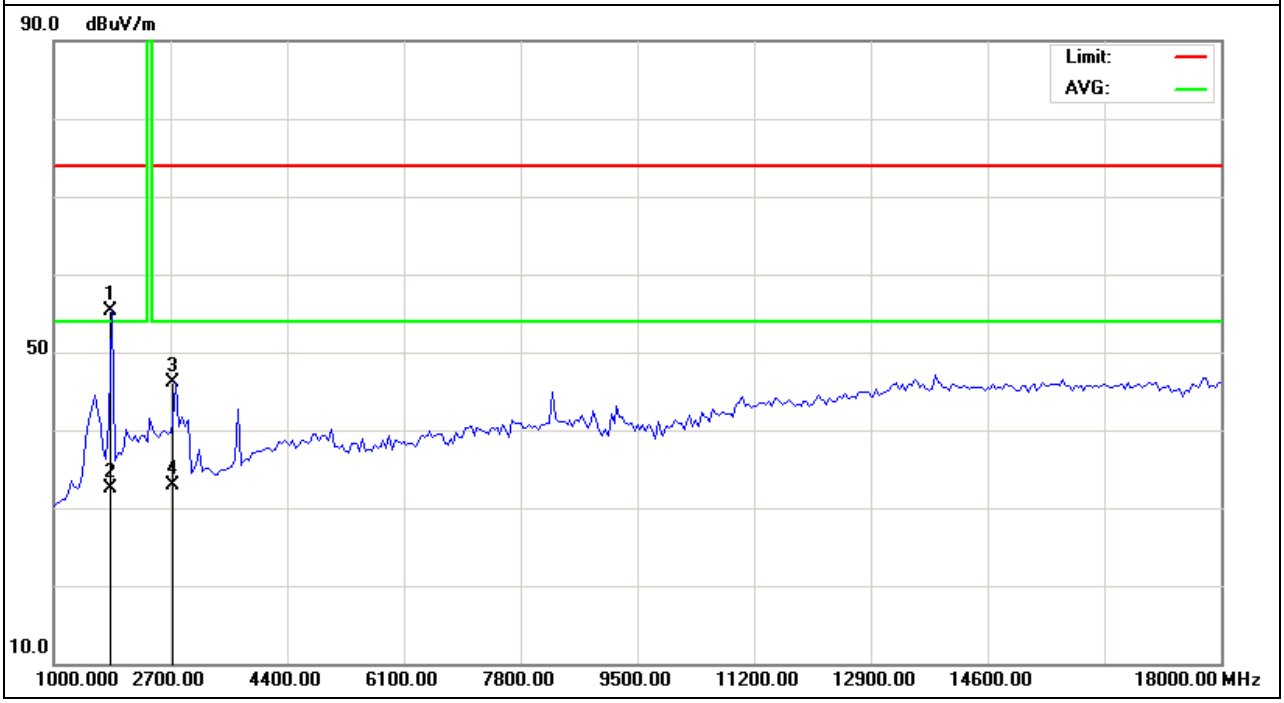
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-912.5MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1825.10	65.98	-10.76	55.22	74.00	-18.78	peak
1825.10	43.25	-10.76	32.49	54.00	-21.51	AVG
2737.50	53.58	-7.56	46.02	74.00	-27.98	peak
2737.50	40.51	-7.56	32.95	54.00	-21.05	AVG

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.

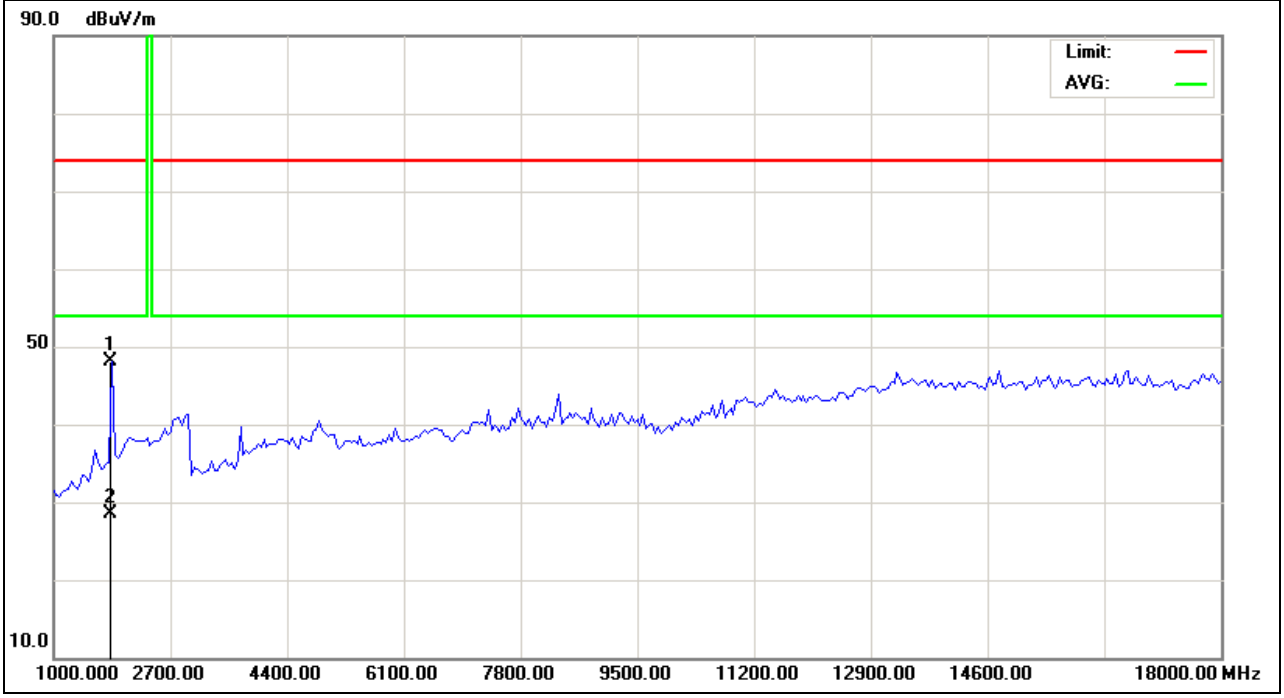


Note: EUT Pre-scan X/Y/Z orientation, only worst case is presented in the report(X orientation).

EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-917.5MHz	Polarization：	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1835.16	58.86	-10.73	48.13	74.00	-25.87	peak
1835.16	39.17	-10.73	28.44	74.00	-45.56	AVG

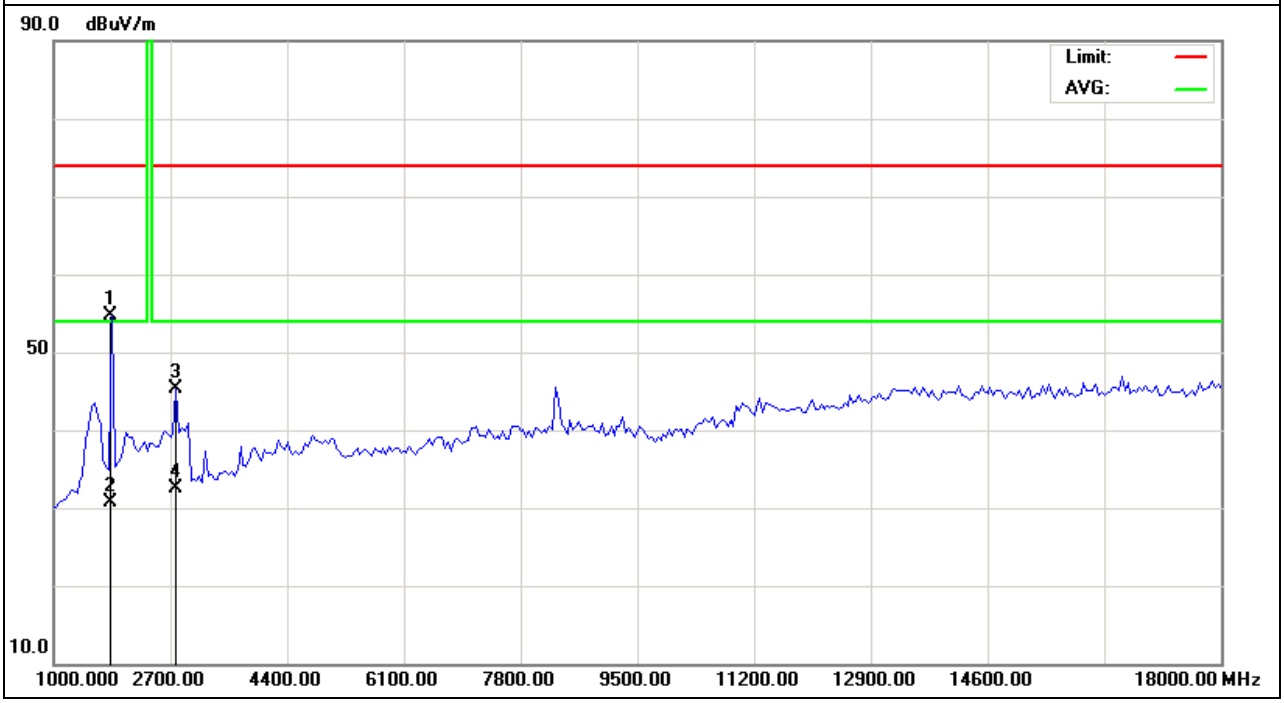
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX-917.5MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1835.14	65.44	-10.73	54.71	74.00	-19.29	peak
1835.14	41.47	-10.73	30.74	54.00	-23.26	AVG
2785.00	52.86	-7.48	45.38	74.00	-28.62	peak
2785.00	40.08	-7.48	32.60	54.00	-21.40	AVG

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.



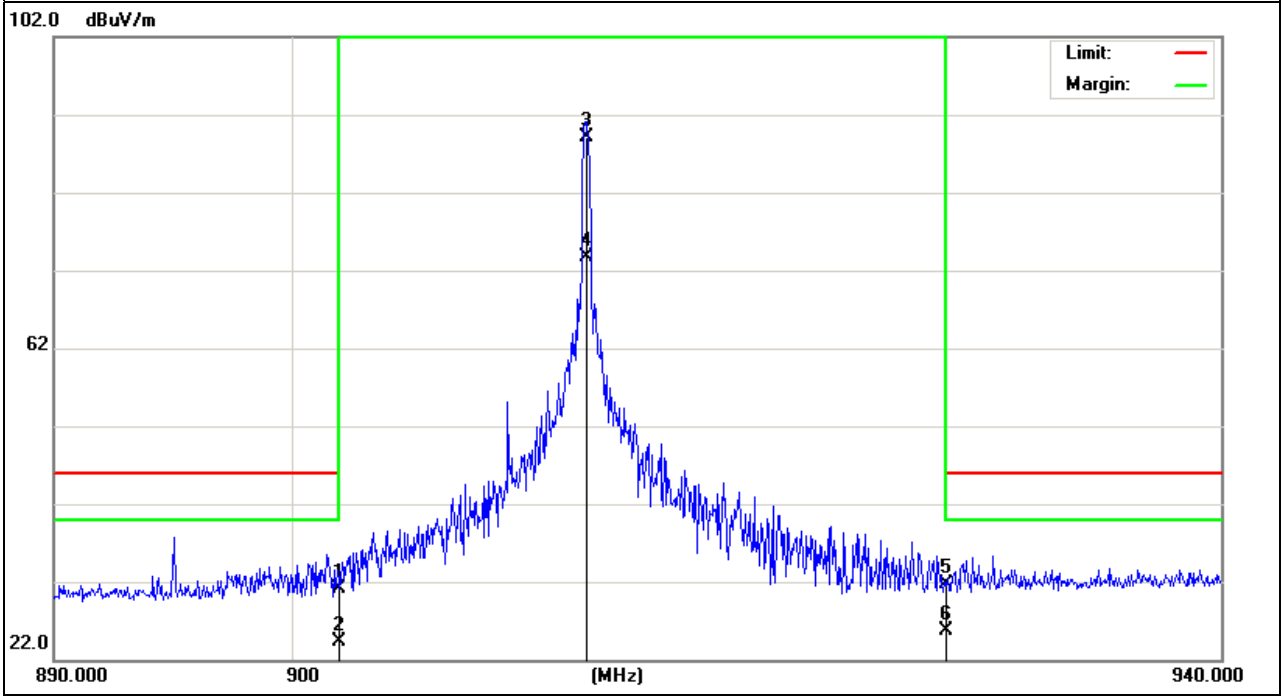
Note: EUT Pre-scan X/Y/Z orientation, only worst case is presented in the report(X orientation).

3.4.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX -912.5MHz	Polarization：	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
902.00	7.03	24.16	31.19	46.00	-14.81	QP
928.00	6.41	25.29	31.70	46.00	-14.30	QP

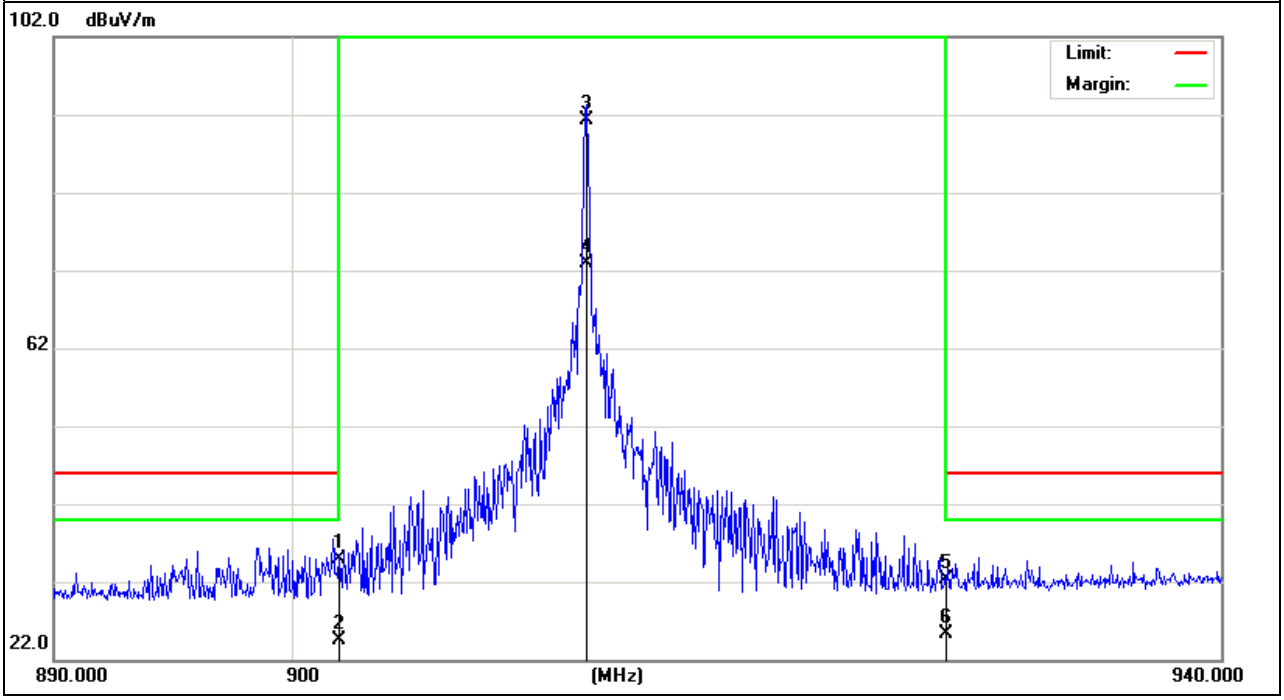
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX -912.5MHz	Polarization：	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
902.00	10.67	24.16	34.83	46.00	-11.17	QP
928.00	7.09	25.29	32.38	46.00	-13.62	QP

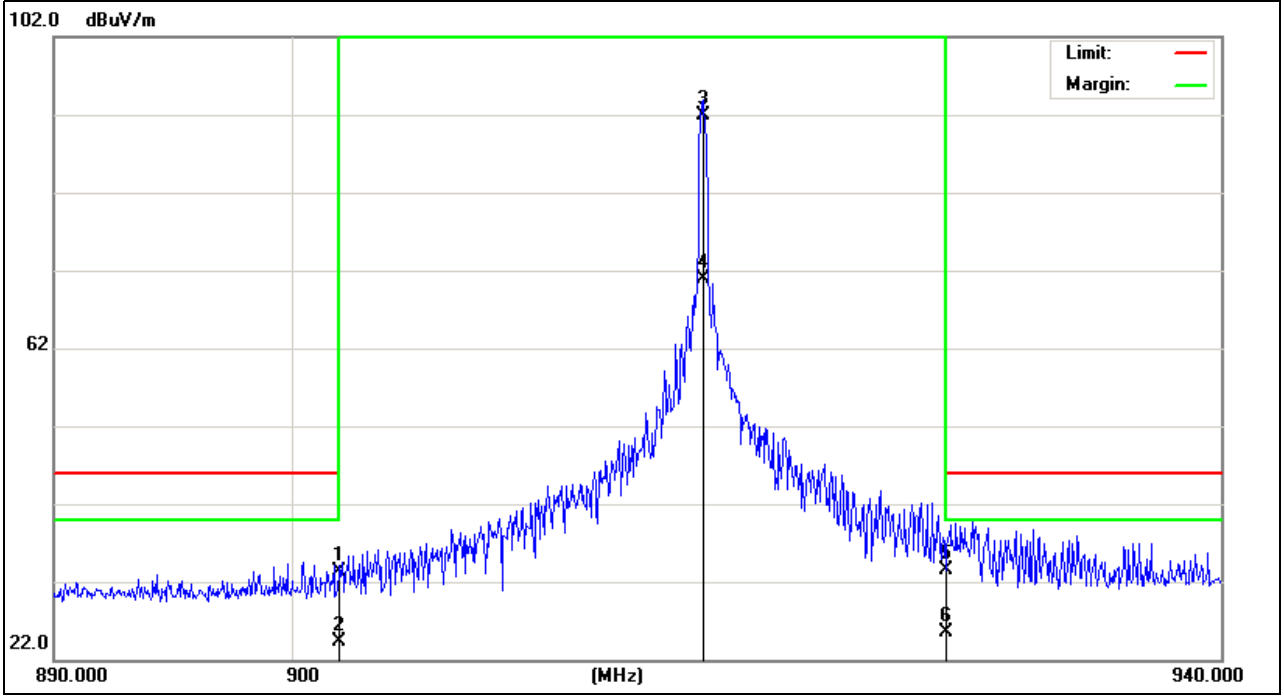
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX -917.5MHz	Polarization：	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
902.00	9.04	24.16	33.20	46.00	-12.80	QP
928.00	8.25	25.29	33.54	46.00	-12.46	QP

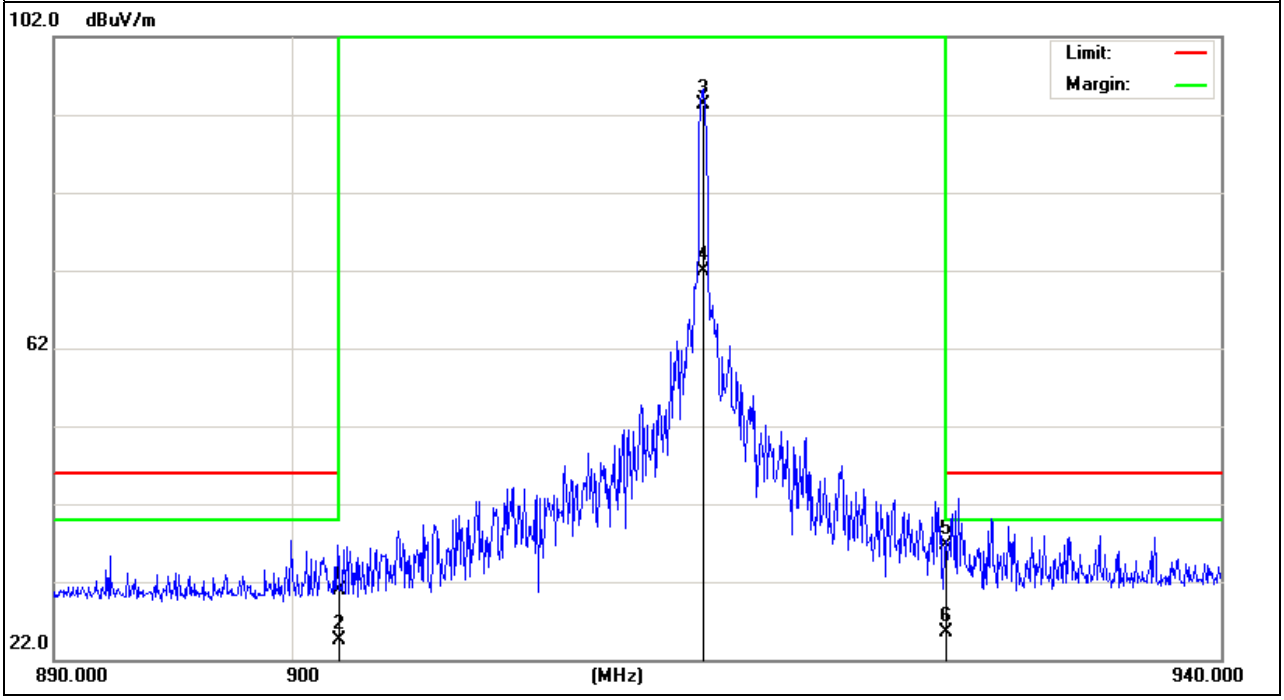
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 12V
Test Mode ：	TX -917.5MHz	Polarization：	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
902.00	6.71	24.16	30.87	46.00	-15.13	QP
928.00	11.32	25.29	36.61	46.00	-9.39	QP

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.

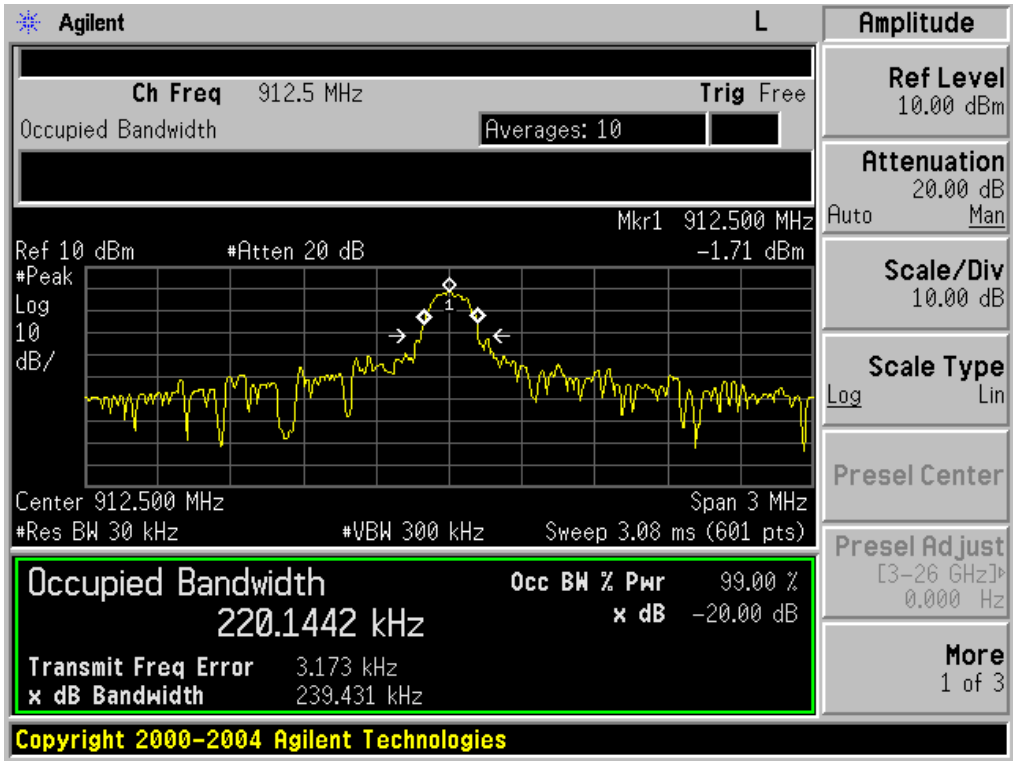
4.3 TEST SETUP

4.4 TEST RESULTS

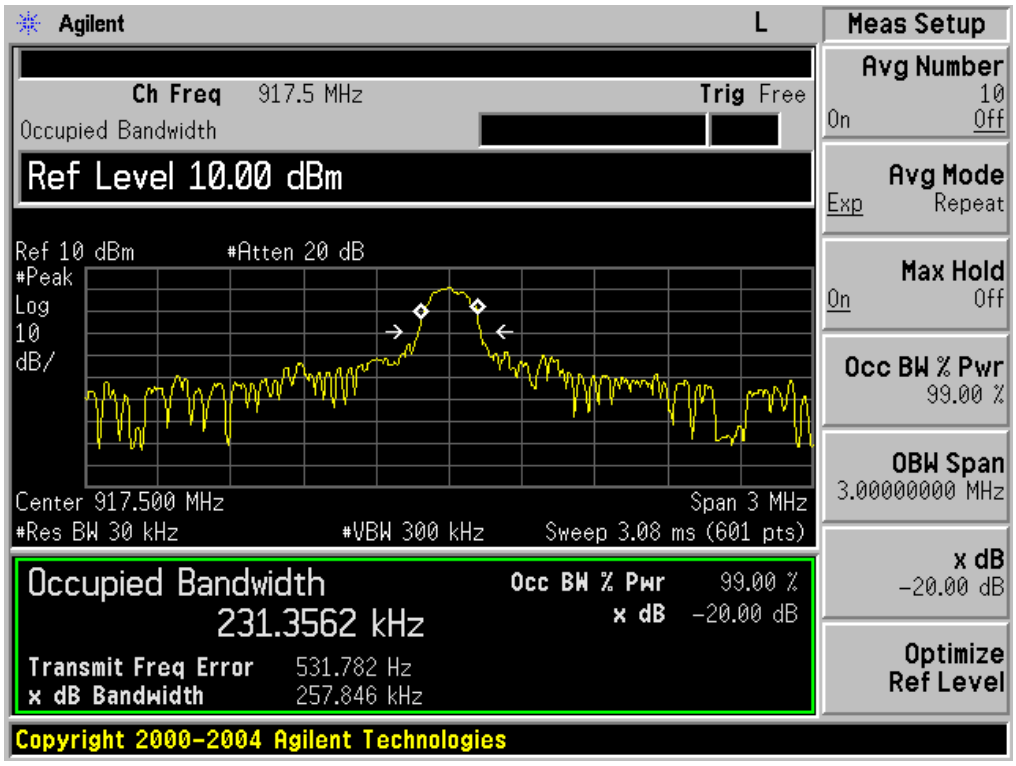
EUT：	UHF Bib Tag Reader	Model Name ：	TUHF-READER-9407
Temperature：	26 ℃	Relative Humidity：	53%
Pressure：	1020 hPa	Test Power ：	DC 12V
Test Mode ：	TX		

Test Channel	Frequency (MHz)	20 dBc Bandwidth (kHz)
CH01	912.5	239.431
CH11	917.5	257.846

912.5 MHz

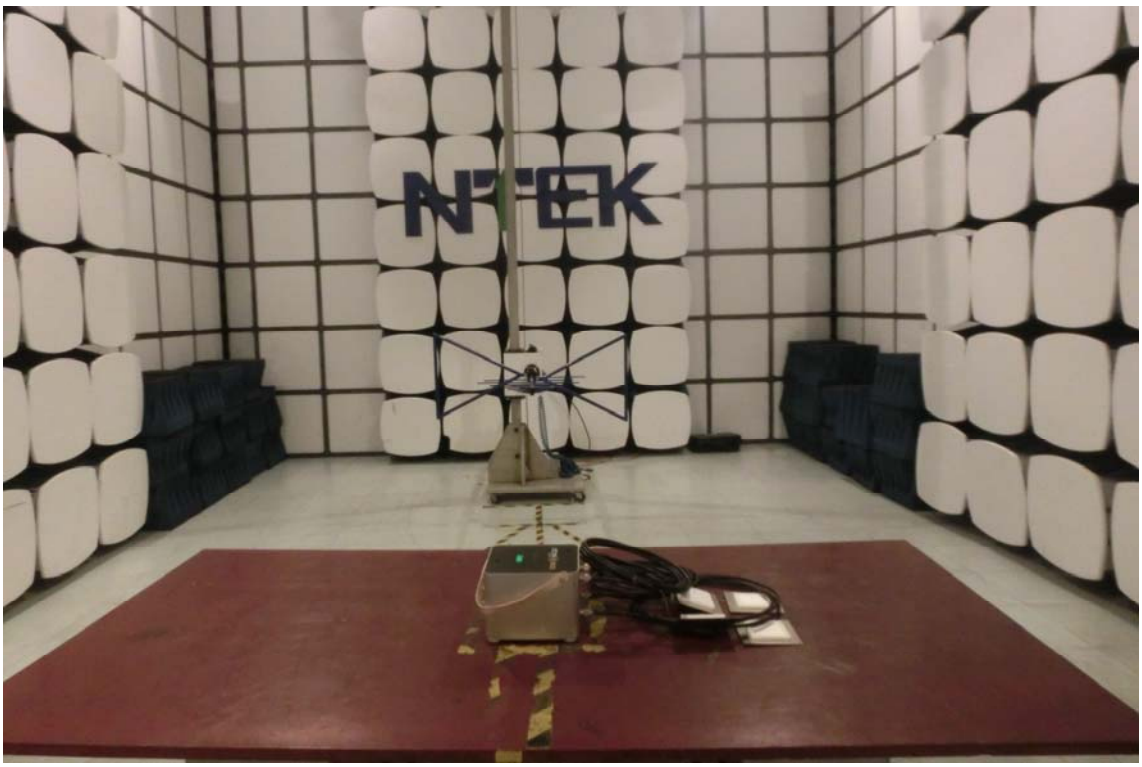


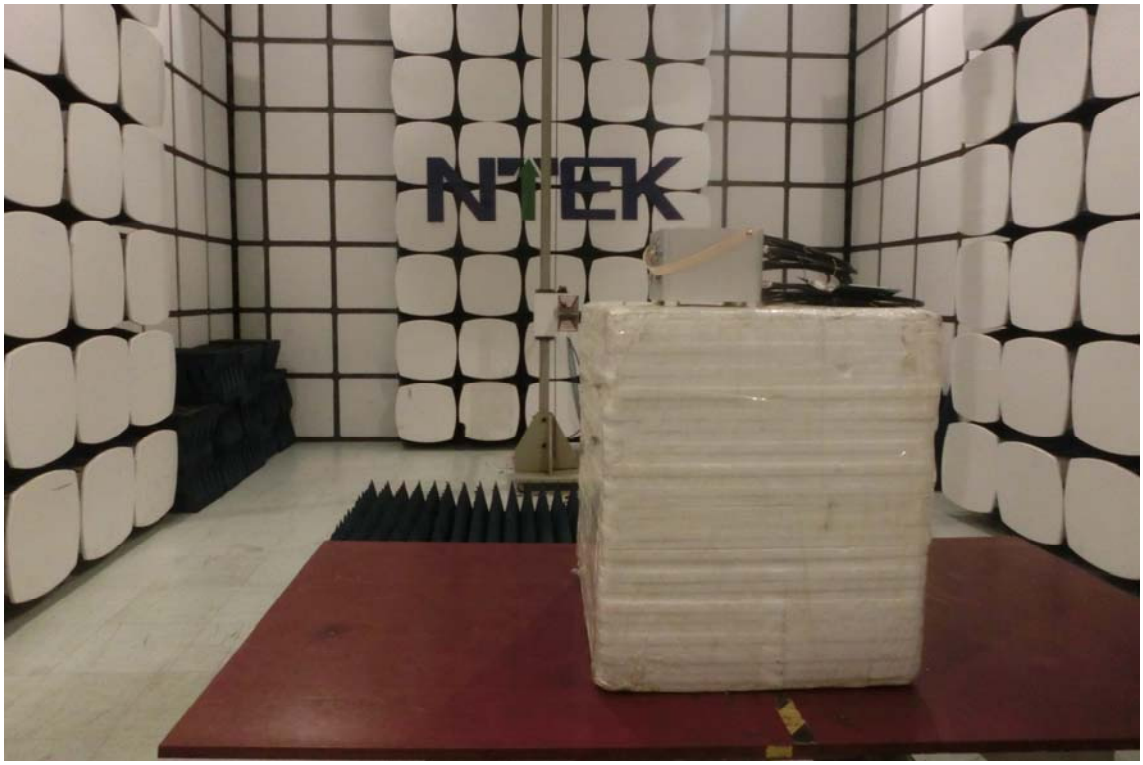
917.5 MHz


Agilent
L
Meas Setup
Ch Freq 917.5 MHz
Trig Free
Occupied Bandwidth
Ref Level 10.00 dBm
Avg Number
10
On Off
Avg Mode
Exp Repeat
Max Hold
On Off
Occ BW % Pwr
99.00 %
OBW Span
3.00000000 MHz
x dB
-20.00 dB
Optimize
Ref Level
Ref 10 dBm
#Atten 20 dB
#Peak
Log
10
dB/
Center 917.500 MHz
Span 3 MHz
#Res BW 30 kHz
#VBW 300 kHz
Sweep 3.08 ms (601 pts)
Occupied Bandwidth
231.3562 kHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error 531.782 Hz
x dB Bandwidth 257.846 kHz
Copyright 2000-2004 Agilent Technologies

5. EUT TEST PHOTO

Radiated Measurement Photos





Conducted Measurement Photos