

APPLICATION FOR VERIFICATION  
On Behalf of  
Hornady Manufacturing Company  
98215 Hornady RADiD Night Guard  
Model No.:98215

FCC ID: 2AFJZ-98215

Prepared for : Hornady Manufacturing Company  
Address : 3625 Old Potash Hwy Grand Island, Nebraska 68803,  
United States

Prepared by : Shenzhen Accurate Technology Co., Ltd.  
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Report No. : ATE20191657  
Date of Test : November 15-18, 2019  
Date of Report : November 20, 2019

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## Test Report Declaration

Applicant& address : Hornady Manufacturing Company  
3625 Old Potash Hwy Grand Island, Nebraska 68803, United States

Manufacturer& address : Hornady Manufacturing Company  
3625 Old Potash Hwy Grand Island, Nebraska 68803, United States

Product : 98215 Hornady RADiD Night Guard

Model No. : 98215

Trade name : N/A


Measurement Procedure Used:


### **FCC Rules and Regulations Part 15 Subpart C 15.207&15.209 ANSI C63.10: 2013**

The device described above is tested by Shenzhen 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 limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen 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 Shenzhen Accurate Technology Co., Ltd.

Date of Test : November 15-18, 2019  
Date of Report : November 20, 2019

Prepared by :   
(Bob Liang, Engineer)

Approved & Authorized Signer :   
(Sean Liu, Manager)

## 1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Power Line Conducted Emission	FCC Part 15.207	Pass
Radiated Emission	FCC Part 15.209	Pass

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

The submitted sample is a 98215 Hornady RADiD Night Guard . The sample is powered by DC 12V (Power by Adapter).

		98215 Hornady RADiD Night Guard
Frequency	:	125KHz
Number of Channels	:	1
Modulation Type	:	ASK
Type of Antenna	:	Internal Antenna
Max antenna gain	:	1dBi
Power Supply	:	DC 12V (Power by Adapter)
Adapter	:	Model: RK-1201000 Input: AC 100-240V; 50/60Hz Output: DC 12V; 1.0A

### 2.2. Special Accessory and Auxiliary Equipment

N/A

## 2.3. Description of Test Facility

EMC Lab	: Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358  Listed by Innovation, Science and Economic Development Canada (ISED) The Registration Number is 5077A-2  Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193  Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	: Shenzhen Accurate Technology Co., Ltd.
Site Location	: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

## 2.4. Measurement Uncertainty

Radiated emission expanded uncertainty (9kHz-30MHz)	: U=2.66dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	: U=4.28dB, k=2
Radiated emission expanded uncertainty (1G-18GHz)	: U=4.98dB, k=2
Radiated emission expanded uncertainty (18G-26.5GHz)	: U=5.06dB, k=2
Conduction Emission Expanded Uncertainty (Mains ports, 9kHz-30MHz)	: U=2.72dB, k=2
Conduction Emission Expanded Uncertainty (Telecommunication ports, 150kHz-30MHz)	: U=2.94dB, k=2
Power disturbance Expanded Uncertainty	: U=2.92dB, k=2
Harmonic current expanded uncertainty	: U=0.512%, k=2

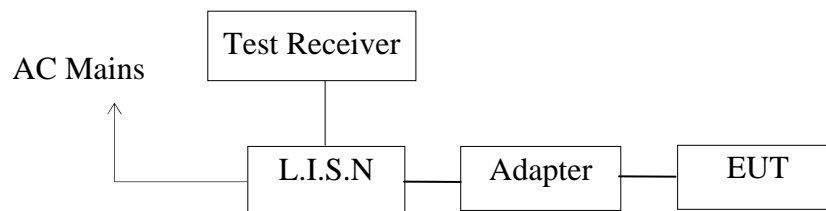
### 3. POWER LINE CONDUCTED MEASUREMENT

#### 3.1. For Power Line Conducted Emission

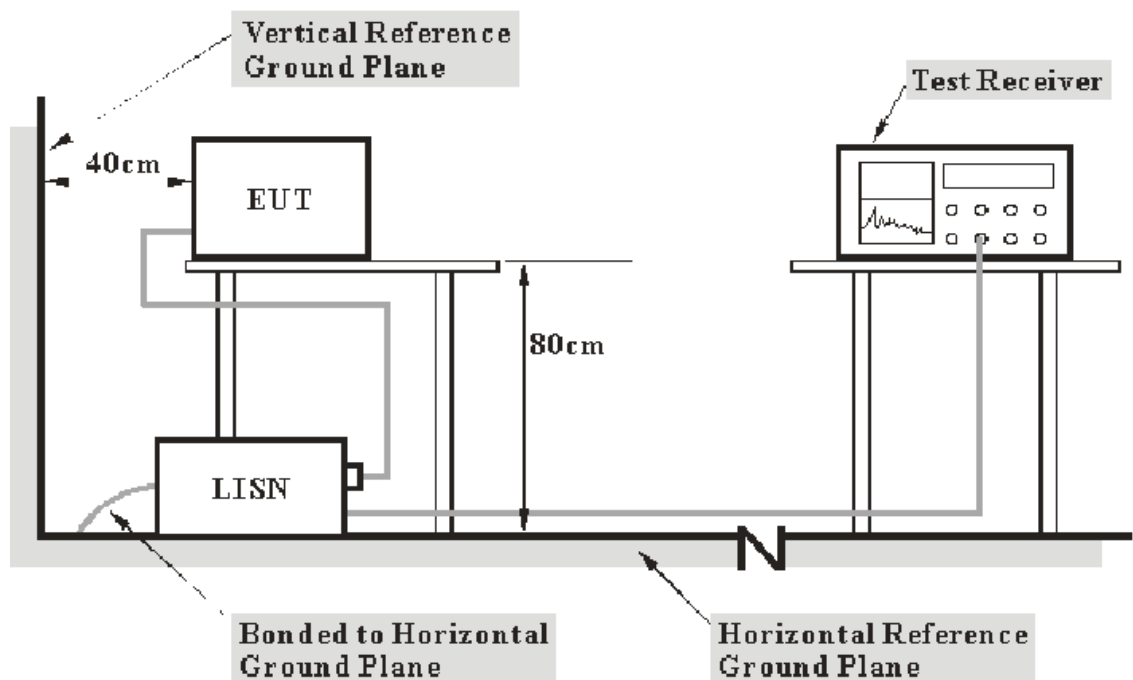
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.05, 2019	1 Year
2.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan.05, 2019	1 Year
3.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan.05, 2019	1 Year
4.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	Jan.05, 2019	1 Year
Expanded Uncertainty: U= 2.23dB, k=2						

#### 3.2. Block Diagram of Test Setup

##### 3.2.1. Block diagram of connection between the EUT and simulators



##### 3.2.2. Test System Setup



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

### 3.3. Power Line Conducted Emission Measurement Limits (Class B)

Frequency MHz	Limits dB( $\mu$ V)	
	Quasi-peak Level	Average Level
0.15—0.50	66—56*	56—46*
0.50—5.00	56	46
5.00—30.0	60	50

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

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

### 3.4. Manufacturer

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

#### 3.4.1. Power bank (EUT)

Model Number: 98215

Manufacturer: Hornady Manufacturing Company

### 3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turn on the power of all equipment.

3.5.3. Let the EUT work in test mode (On) and measure it.

### 3.6. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

### 3.7.Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dBμV)	Average Level (dBμV)	QuasiPeak Limit (dBμV)	Average Limit (dBμV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	10.6	25.3	17.0	59.0	49.0	33.4	31.7	Pass

Frequency(MHz) = Emission frequency in MHz

Transducer value(dB) = Insertion loss of LISN + Cable Loss

Level(dBμV) = Quasi-peak Reading/Average Reading + Transducer value

Limit (dBμV) = Limit stated in standard

Margin = Limit (dBμV) - Level (dBμV)

Calculation Formula:

Margin = Limit (dBμV) - Level (dBμV)

### 3.8. Power Line Conducted Emission Measurement Results

**PASS.**

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

Test mode : On (AC 120V/60Hz)								
EUT mode : 98215								
<b>MEASUREMENT RESULT: "YH-1115-04_fin"</b>								
11/15/2019 4:56PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.360000	33.70	10.6	59	25.0	QP	N	GND	
0.390000	44.20	10.7	58	13.9	QP	N	GND	
1.720000	31.50	10.9	56	24.5	QP	N	GND	
4.100000	40.60	11.1	56	15.4	QP	N	GND	
10.510000	39.70	11.3	60	20.3	QP	N	GND	
13.360000	39.60	11.3	60	20.4	QP	N	GND	
<b>MEASUREMENT RESULT: "YH-1115-04_fin2"</b>								
11/15/2019 4:56PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.320000	26.60	10.6	50	23.1	AV	N	GND	
0.425000	34.70	10.7	47	12.6	AV	N	GND	
1.575000	25.60	10.9	46	20.4	AV	N	GND	
4.120000	32.00	11.1	46	14.0	AV	N	GND	
10.075000	29.20	11.3	50	20.8	AV	N	GND	
13.420000	29.50	11.3	50	20.5	AV	N	GND	
<b>MEASUREMENT RESULT: "YH-1115-03_fin"</b>								
11/15/2019 4:52PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.195000	36.30	10.5	64	27.5	QP	L1	GND	
0.420000	37.50	10.7	57	19.9	QP	L1	GND	
1.710000	24.90	10.9	56	31.1	QP	L1	GND	
3.540000	37.20	11.1	56	18.8	QP	L1	GND	
10.465000	40.80	11.3	60	19.2	QP	L1	GND	
13.180000	35.40	11.3	60	24.6	QP	L1	GND	
<b>MEASUREMENT RESULT: "YH-1115-03_fin2"</b>								
11/15/2019 4:52PM								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.165000	23.80	10.5	55	31.4	AV	L1	GND	
0.425000	28.50	10.7	47	18.8	AV	L1	GND	
1.780000	16.20	11.0	46	29.8	AV	L1	GND	
4.010000	27.00	11.1	46	19.0	AV	L1	GND	
10.225000	26.90	11.3	50	23.1	AV	L1	GND	
13.615000	27.50	11.3	50	22.5	AV	L1	GND	

Test mode : On (AC 240V/60Hz)

EUT mode : 98215

**MEASUREMENT RESULT: "YH-1115-02\_fin"**

11/15/2019 4:48PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.155000	39.10	10.5	66	26.6	QP	L1	GND
0.420000	37.60	10.7	57	19.8	QP	L1	GND
2.000000	30.50	11.0	56	25.5	QP	L1	GND
3.890000	43.10	11.1	56	12.9	QP	L1	GND
10.420000	46.90	11.3	60	13.1	QP	L1	GND
13.195000	37.00	11.3	60	23.0	QP	L1	GND

**MEASUREMENT RESULT: "YH-1115-02\_fin2"**

11/15/2019 4:48PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.190000	21.90	10.5	54	32.1	AV	L1	GND
0.425000	27.60	10.7	47	19.7	AV	L1	GND
2.090000	19.40	11.0	46	26.6	AV	L1	GND
3.860000	31.80	11.1	46	14.2	AV	L1	GND
10.450000	31.30	11.3	50	18.7	AV	L1	GND
13.570000	28.90	11.3	50	21.1	AV	L1	GND

**MEASUREMENT RESULT: "YH-1115-01\_fin"**

11/15/2019 4:44PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.360000	37.10	10.6	59	21.6	QP	N	GND
0.395000	42.80	10.7	58	15.2	QP	N	GND
1.585000	37.40	10.9	56	18.6	QP	N	GND
3.820000	43.90	11.1	56	12.1	QP	N	GND
10.450000	46.20	11.3	60	13.8	QP	N	GND
13.765000	42.60	11.3	60	17.4	QP	N	GND

**MEASUREMENT RESULT: "YH-1115-01\_fin2"**

11/15/2019 4:44PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.270000	30.50	10.6	51	20.6	AV	N	GND
0.420000	36.00	10.7	47	11.4	AV	N	GND
1.625000	30.10	10.9	46	15.9	AV	N	GND
3.930000	37.90	11.1	46	8.1	AV	N	GND
10.420000	33.80	11.3	50	16.2	AV	N	GND
13.660000	32.30	11.3	50	17.7	AV	N	GND

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

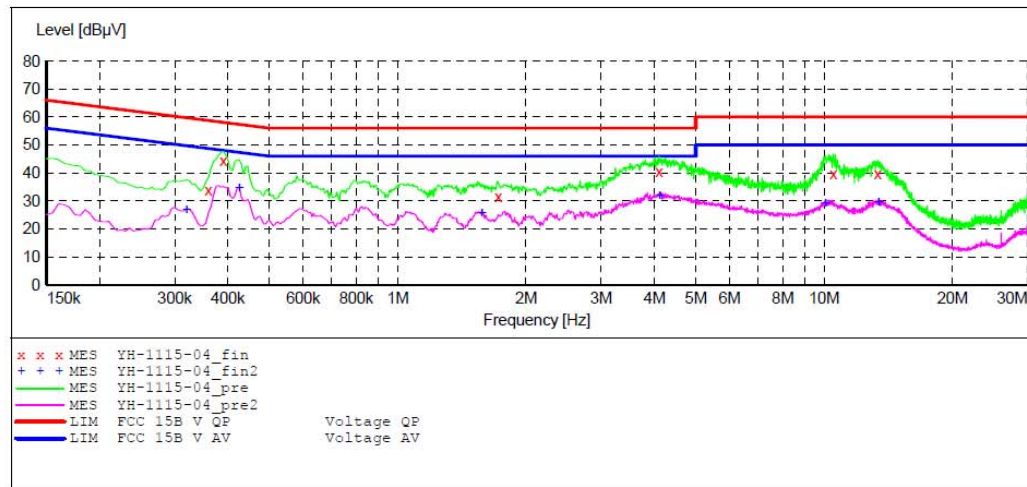
ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: 98215 Hornady RAPiD Night Guard M/N:98215  
Manufacturer: Hornaday  
Operating Condition: ON  
Test Site: 1#Shielding Room  
Operator: Ben  
Test Specification: N 120V/60Hz  
Comment: Report NO.:ATE20191657  
Start of Test: 11/15/2019 / 4:53:09PM

### SCAN TABLE: "V 9K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
Start Stop Step Detector Meas. IF Transducer  
Frequency Frequency Width Time Bandw.  
9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
Average  
150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
Average



### MEASUREMENT RESULT: "YH-1115-04\_fin"

11/15/2019 4:56PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.360000	33.70	10.6	59	25.0	QP	N	GND
0.390000	44.20	10.7	58	13.9	QP	N	GND
1.720000	31.50	10.9	56	24.5	QP	N	GND
4.100000	40.60	11.1	56	15.4	QP	N	GND
10.510000	39.70	11.3	60	20.3	QP	N	GND
13.360000	39.60	11.3	60	20.4	QP	N	GND

### MEASUREMENT RESULT: "YH-1115-04\_fin2"

11/15/2019 4:56PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.320000	26.60	10.6	50	23.1	AV	N	GND
0.425000	34.70	10.7	47	12.6	AV	N	GND
1.575000	25.60	10.9	46	20.4	AV	N	GND
4.120000	32.00	11.1	46	14.0	AV	N	GND
10.075000	29.20	11.3	50	20.8	AV	N	GND
13.420000	29.50	11.3	50	20.5	AV	N	GND

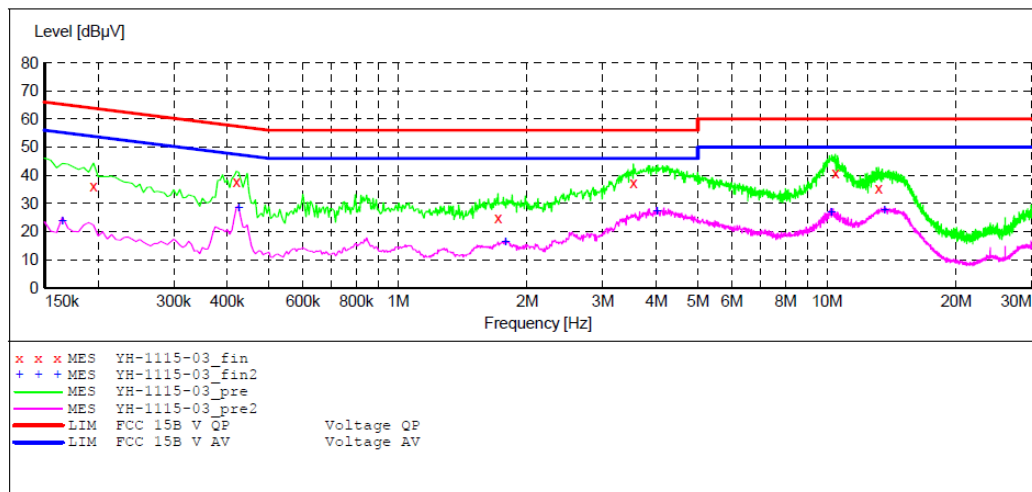
ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: 98215 Hornady RAPiD Night Guard M/N:98215  
 Manufacturer: Hornday  
 Operating Condition: ON  
 Test Site: 1#Shielding Room  
 Operator: Ben  
 Test Specification: L 120V/60Hz  
 Comment: Report NO.:ATE20191657  
 Start of Test: 11/15/2019 / 4:49:09PM

### SCAN TABLE: "V 9K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
 Average  
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



### MEASUREMENT RESULT: "YH-1115-03\_fin"

11/15/2019 4:52PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	36.30	10.5	64	27.5	QP	L1	GND
0.420000	37.50	10.7	57	19.9	QP	L1	GND
1.710000	24.90	10.9	56	31.1	QP	L1	GND
3.540000	37.20	11.1	56	18.8	QP	L1	GND
10.465000	40.80	11.3	60	19.2	QP	L1	GND
13.180000	35.40	11.3	60	24.6	QP	L1	GND

### MEASUREMENT RESULT: "YH-1115-03\_fin2"

11/15/2019 4:52PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.165000	23.80	10.5	55	31.4	AV	L1	GND
0.425000	28.50	10.7	47	18.8	AV	L1	GND
1.780000	16.20	11.0	46	29.8	AV	L1	GND
4.010000	27.00	11.1	46	19.0	AV	L1	GND
10.225000	26.90	11.3	50	23.1	AV	L1	GND
13.615000	27.50	11.3	50	22.5	AV	L1	GND

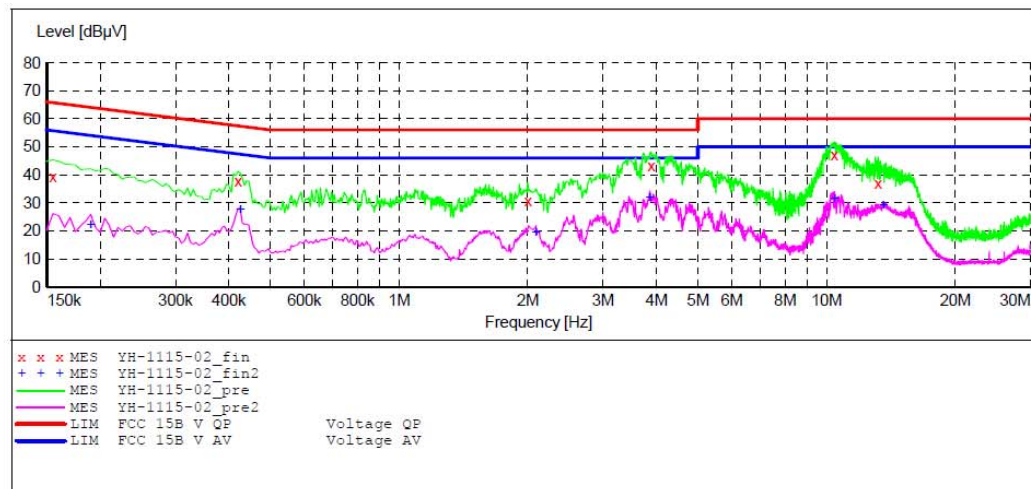
ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: 98215 Hornady RAPiD Night Guard M/N:98215  
 Manufacturer: Hornday  
 Operating Condition: ON  
 Test Site: 1#Shielding Room  
 Operator: Ben  
 Test Specification: L 240V/60Hz  
 Comment: Report NO.:ATE20191657  
 Start of Test: 11/15/2019 / 4:45:05PM

### SCAN TABLE: "V 9K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
 Average  
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



### MEASUREMENT RESULT: "YH-1115-02\_fin"

11/15/2019 4:48PM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.155000	39.10	10.5	66	26.6	QP	L1	GND
0.420000	37.60	10.7	57	19.8	QP	L1	GND
2.000000	30.50	11.0	56	25.5	QP	L1	GND
3.890000	43.10	11.1	56	12.9	QP	L1	GND
10.420000	46.90	11.3	60	13.1	QP	L1	GND
13.195000	37.00	11.3	60	23.0	QP	L1	GND

### MEASUREMENT RESULT: "YH-1115-02\_fin2"

11/15/2019 4:48PM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.190000	21.90	10.5	54	32.1	AV	L1	GND
0.425000	27.60	10.7	47	19.7	AV	L1	GND
2.090000	19.40	11.0	46	26.6	AV	L1	GND
3.860000	31.80	11.1	46	14.2	AV	L1	GND
10.450000	31.30	11.3	50	18.7	AV	L1	GND
13.570000	28.90	11.3	50	21.1	AV	L1	GND

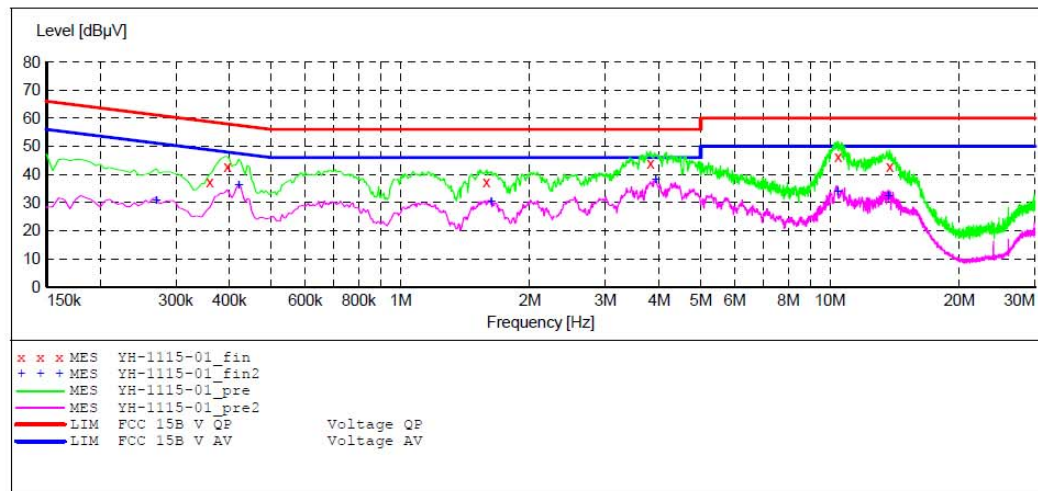
## ACCURATE TECHNOLOGY CO., LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: 98215 Hornady RAPiD Night Guard M/N:98215  
 Manufacturer: Hornday  
 Operating Condition: ON  
 Test Site: 1#Shielding Room  
 Operator: Ben  
 Test Specification: N 240V/60Hz  
 Comment: Report NO.:ATE20191657  
 Start of Test: 11/15/2019 / 4:40:48PM

#### SCAN TABLE: "V 9K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
 Average  
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



#### MEASUREMENT RESULT: "YH-1115-01\_fin"

11/15/2019 4:44PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.360000	37.10	10.6	59	21.6	QP	N	GND
0.395000	42.80	10.7	58	15.2	QP	N	GND
1.585000	37.40	10.9	56	18.6	QP	N	GND
3.820000	43.90	11.1	56	12.1	QP	N	GND
10.450000	46.20	11.3	60	13.8	QP	N	GND
13.765000	42.60	11.3	60	17.4	QP	N	GND

#### MEASUREMENT RESULT: "YH-1115-01\_fin2"

11/15/2019 4:44PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.270000	30.50	10.6	51	20.6	AV	N	GND
0.420000	36.00	10.7	47	11.4	AV	N	GND
1.625000	30.10	10.9	46	15.9	AV	N	GND
3.930000	37.90	11.1	46	8.1	AV	N	GND
10.420000	33.80	11.3	50	16.2	AV	N	GND
13.660000	32.30	11.3	50	17.7	AV	N	GND

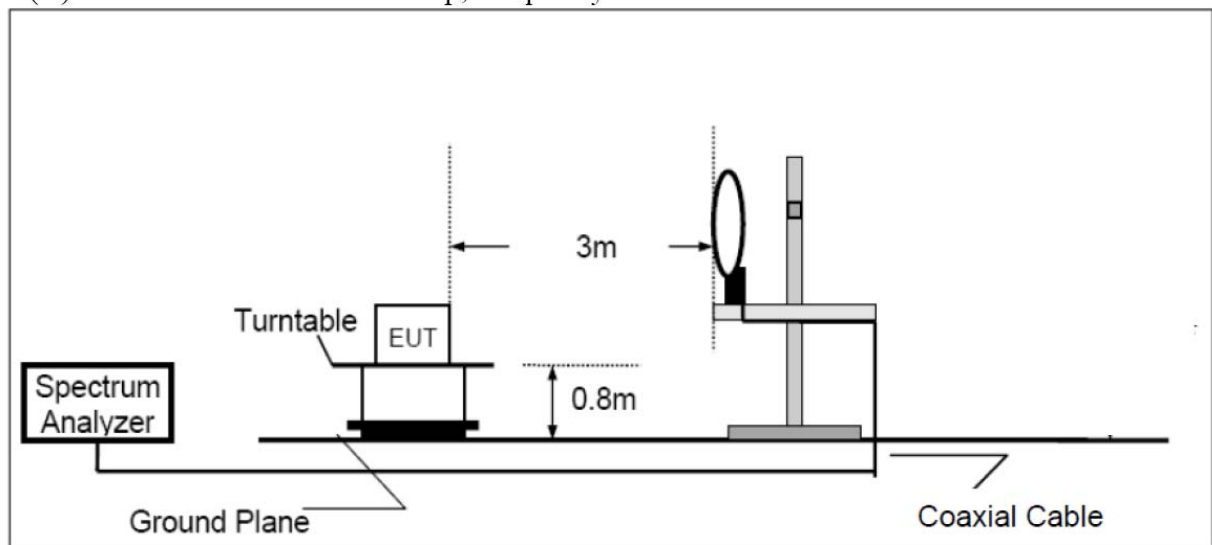
## 4. RADIATED EMISSION MEASUREMENT

### 4.1. For Radiated Emission Measurement

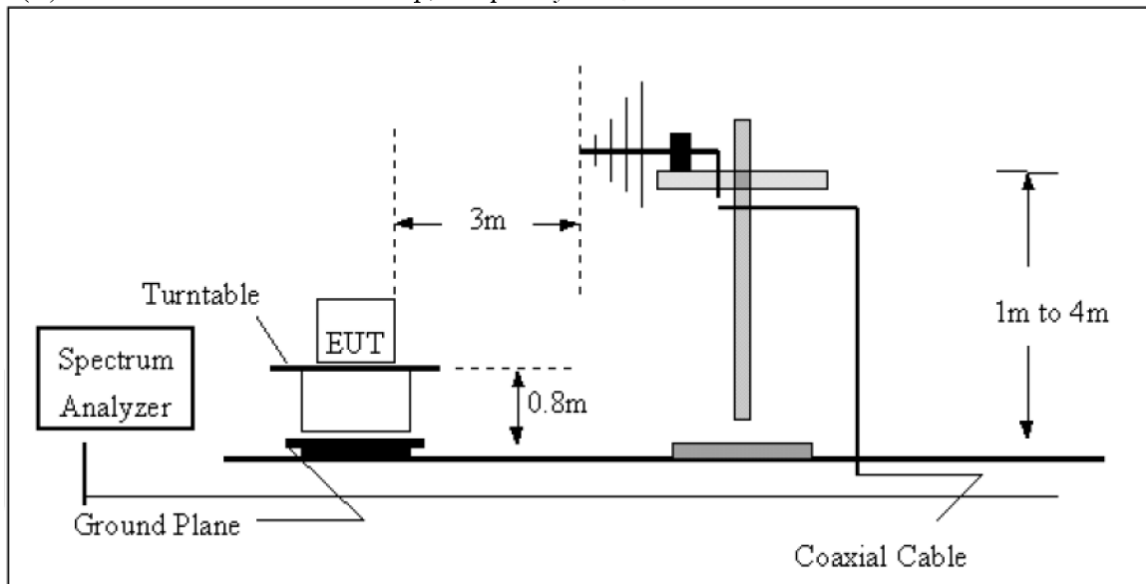
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan.05, 2019	1 Year
2.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.05, 2019	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan.05, 2019	1 Year
4.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan.05, 2019	1 Year
5.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan.05, 2019	1 Year
6.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.05, 2019	1 Year
12.	Pre-Amplifier	Rohde & Schwarz	CBLU11835 40-01	3791	Jan.05, 2019	1 Year
Expanded Uncertainty (9kHz-30MHz): U=3.08dB, k=2 Expanded Uncertainty (30MHz-1000MHz): U=4.42dB, k=2 Expanded Uncertainty (Above 1GHz): U=4.06dB, k=2						

### 4.2. TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency below 30MHz

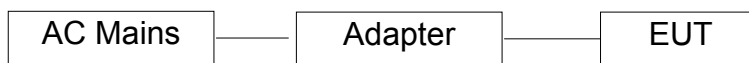


(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



### 4.3. Block Diagram of Test Setup

#### 4.3.1. Block diagram of connection between the EUT and simulators



### 4.4. Radiated Emission Limit

Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

Limit:  $2400/125=19.2\mu\text{V/m}@300\text{m}$

Distance Correction Factor= $40\log(\text{test distance}/\text{specific distance})$

### 4.5. EUT Configuration on Measurement

The equipment is 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.

## 4.6. Operating Condition of EUT

4.6.1. Setup the EUT and simulator as shown as Section 4.2.

4.6.2. Turn on the power of all equipment.

4.6.3. Let the EUT work in test mode and measure it.

## 4.7. 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 C63.10:2013 on radiated emission measurement.

From 9kHz to 30MHz at distance 3m The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

From 30MHz to 1000MHz at distance 3m The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The final measurement will be performed with an EMI Receiver set to Quasi Peak detector for the frequency bands 9kHz to 90kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209(d)(2).

The final level, expressed in dBuV/m, is arrived at by taking the reading from the EMI receiver (Level dBuV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has to be compared with the relevant FCC limit. The resolution bandwidth during the measurement is as follows:

9kHz – 150kHz: ResBW:200Hz

150kHz – 30MHz: ResBW:9kHz

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz from 30MHz to 1000MHz.

## 4.8. Radiated Emission Noise Measurement Result

**PASS.**

From 9 kHz to 30MHz

Frequency (MHz)	Quasi Peak (dB $\mu$ V/m)	Azimuth	Polarity (H/V)	Factors (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
0.125	72.58	147	H	-56.36	105.7	-33.12
2.21	38.74	34	H	-54.15	69.5	-30.76
2.59	39.25	210	H	-53.01	69.5	-30.25
0.125	74.44	220	V	-56.36	105.7	-31.26
2.66	43.51	320	V	-51.27	69.5	-25.99
3.56	34.77	54	V	-51.25	69.5	-34.73

Part 15 Section 15.31(f)(2) (9kHz-30MHz)

Limit at 3m=Limit at 300m-40\*log(300(m)/3(m))

Limit at 3m=Limit at 30m-40\*log(30(m)/3(m))



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Job No.: JPYS #1

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: 98215 Hornady RAPiD Night Guard

Mode: TX 125kHz

Model: 98215

Manufacturer: Hornady

Polarization: Vertical

Power Source: AC 120V/60Hz

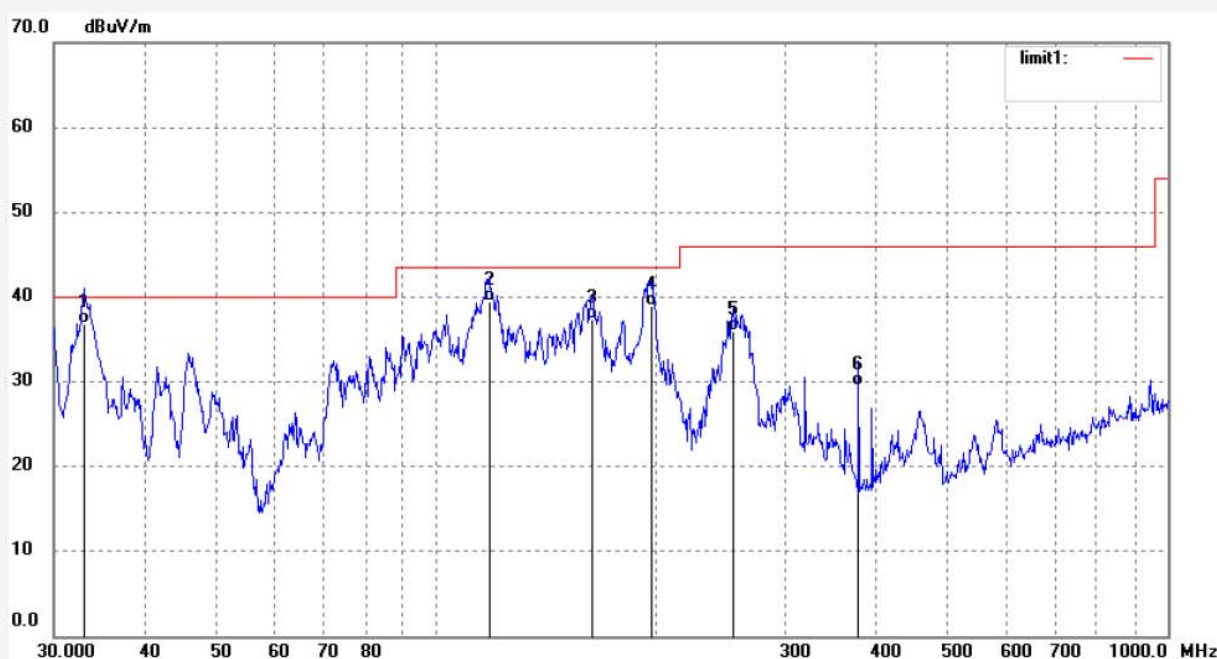
Date: 19/11/18/

Time: 9/55/06

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20191657



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.9853	57.75	-20.95	36.80	40.00	-3.20	QP	100	102	
2	118.0957	66.80	-27.40	39.40	43.50	-4.10	QP	100	136	
3	163.1623	64.13	-26.73	37.40	43.50	-6.10	QP	100	165	
4	197.2514	63.51	-24.51	39.00	43.50	-4.50	QP	100	198	
5	254.9253	59.35	-23.35	36.00	46.00	-10.00	QP	100	215	
6	377.8481	48.16	-18.66	29.50	46.00	-16.50	QP	100	296	

Job No.: JPYS #2

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: 98215 Hornady RAPiD Night Guard

Mode: TX 125kHz

Model: 98215

Manufacturer: Hornady

Polarization: Horizontal

Power Source: AC 120V/60Hz

Date: 19/11/18/

Time: 9/55/51

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20191657



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.8697	48.21	-20.91	27.30	40.00	-12.70	QP	200	106	
2	102.6115	65.89	-28.09	37.80	43.50	-5.70	QP	200	153	
3	116.4475	67.48	-27.38	40.10	43.50	-3.40	QP	200	196	
4	163.1622	67.03	-26.73	40.30	43.50	-3.20	QP	200	210	
5	195.8701	64.89	-24.59	40.30	43.50	-3.20	QP	200	263	
6	261.2730	65.56	-22.96	42.60	46.00	-3.40	QP	200	301	

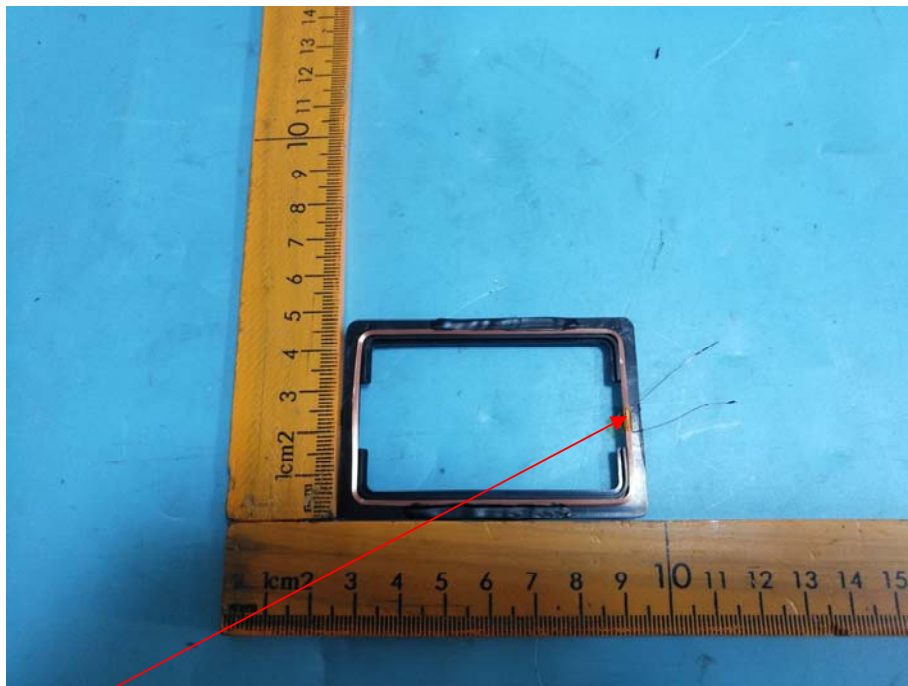
## 5. ANTENNA REQUIREMENT

### 5.1.The Requirement

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.

### 5.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 1dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



**Antenna**