

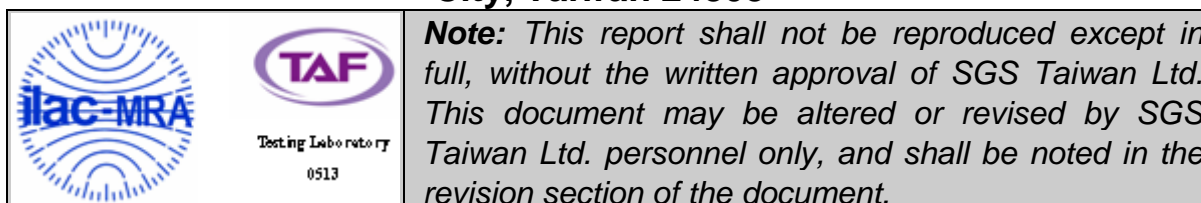
# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

**Product Name:** SWITCH ASSY.,TRANSMITTER  
**Brand Name:** N/A  
**Model No.:** 37182-59K0, 37182-59K00, 37182-67L00  
**Model Difference:** N/A  
**FCC ID:** ELVNTQI  
**Report No.:** ER/2016/80200  
**Issue Date:** Sep. 12, 2016  
**Rule Part:** §15.231  
**Prepared for:** NUTEK CORPORATION  
No. 167, Lane 235, Bauchiau Rd., Xindian  
District, New Taipei City 23145, Taiwan

**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
No.134, Wu Kung Road, New Taipei  
Industrial Park, Wuku District, New Taipei  
City, Taiwan 24803



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## VERIFICATION OF COMPLIANCE

**Applicant:** NUTEK CORPORATION  
No. 167, Lane 235, Bauchiau Rd., Xindian District, New Taipei  
City 23145, Taiwan

**Product Name:** SWITCH ASSY., TRANSMITTER

**Brand Name:** N/A

**Model No.:** 37182-59K0, 37182-59K00, 37182-67L00

**Model Difference:** N/A

**FCC ID:** ELVNTQI

**File Number:** ER/2016/80200

**Date of Test:** Aug. 26, 2016 ~ Sep. 05, 2016

**Date of EUT Received:** Aug. 26, 2016

**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.231.

The test results of this report relate only to the tested sample identified in this report.

**Test By:** Jerry Lu **Date:** Sep. 12, 2016

**Louis Chen / Engineer**

**Prepared By:** Allen Tsai **Date:** Sep. 12, 2016

**Allen Tsai / Engineer**

**Approved By:** Jim Chang **Date:** Sep. 12, 2016

**Jim Chang / Asst. Manager**

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## Version

Report Number	Revision	Description	Issue Date
ER/2016/80200	Rev.00	Initial creation of document	Sep. 12, 2016

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## 1. GENERAL INFORMATION

### 1.1 Product Description

#### General:

Product Name:	SWITCH ASSY., TRANSMITTER
Brand Name:	N/A
Model No.:	37182-59K0, 37182-59K00, 37182-67L00
Model Difference:	N/A
Product SW version:	N/A
Radio HW version:	N/A
Power Supply:	3VDC from CR1620 Battery.

#### 433 MHz:

Operating Frequency	433.92MHz
Transmit Power	≤ 79.75 dBuV/m Max.
Modulation Technique	ASK
Number of Channels	1 Channel
Antenna Type	LOOP Antenna

### 1.2 Related Submittal(s) / Grant (s)

The equipment under Test (Hereafter Called: EUT) is supporting below features.

Product Feature	
Specification	433.92MHz

**Note:** The above EUT information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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### 1.3 Test Methodology

FCC Part 15, Subpart C §15.231

ANSI C63.10:2013

Note: All test items have been performed and record as per the above standards.

### 1.4 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road,  
New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803

FCC Registration Numbers are: 509634

### 1.5 Special Accessories

There are no special accessories used while test was conducted.

### 1.6 Equipment Modifications

There was no modification incorporated into the EUT.

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## 2. SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions (Not apply in the report)

The EUT is a placed on as turn table which is 0.8m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz,. The CISPR Quasi-Peak and Average detector mode is employed according to §15.107. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m above the reference ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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## 2.4 Limitation

### (1) Conducted Emission

According to section 15.207(a) Conducted Emission Limits is as following.

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 – 0.5	66 - 56	56 - 46
0.5 – 5	56	46
5 - 30	60	50

### (2) Radiated Emission

According to 15.231(b), the field strength of emissions from Intentional Radiators operated under this section shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental		Field Strength of Spurious	
	(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)
40.66 - 40.70	67.04	2,250	47	225
70 - 130	61.94	1,250	41.9	125
130 - 174	* 61.94 - 71.48	* 1,250 -3,750	* 41.9 – 51.48	* 125 to 375
174 - 260	71.48	3,750	51.48	375
260 - 470	* 71.48 - 81.94	* 3,750 - 12,500	* 51.48 - 54	* 375 to 1250
above 470	81.94	12,500	74	1250

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- Remark 1. Emission level in dBuV/m= $20 \log (\mu\text{V/m})$   
:  
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.  
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205  
4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of §15.205, then the general radiated emission limits in § 15.209 apply.  
5. For the band 130-174MHz,  $\mu\text{V/m}$  at 3meters =  $56.81818(F) - 6136.3636$ ;  
For the band 260-470MHz  $\mu\text{V/m}$  at 3meters =  $41.6667(F) - 7083.3333$ ;  
Where F is the frequency in MHz.

Operation Freq.	433.92 MHz
$41.6667 \times 433.92 - 7083.3333 =$	10996.681 $\mu\text{V/m}$
$20\log(10996.68) =$	80.83 dBuV/m (AV Limit)
$80.83 + 20 =$	100.83 dBuV/m (Peak Limit)

## 2.6 Configuration of Tested System

**Fig. 2-1 Configuration of Tested System**

EUT(TX)

**Table 2-1 Equipment Used in Tested System**

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	N/A					

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### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207	Conducted Emission	N/A
§15.231	Radiated Emission	Compliant
§15.231(c)	20dB Bandwidth	Compliant
§15.35 (c)	Duty Cycle Test (Pulse Modulation)	Compliant
§15.231(a)(1)	Release Time Measurement	Compliant

### 4. DESCRIPTION OF TEST MODES

#### 4.1 Operated in 433.92 MHz Band

1 channel is provided.

CH	FREQUENCY
01	433.92 MHz

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## 4.2 The Worst Test Modes and Channel Details

### RADIATED EMISSION TEST:

RADIATED EMISSION TEST (BELOW 1 GHz)			
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION
433 MHz	1	1	ASK
RADIATED EMISSION TEST (ABOVE 1 GHz)			
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION
433 MHz	1	1	ASK

**Note:**

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 433MHz Transmitter, the worst case H position was reported.

### ANTENNA PORT CONDUCTED MEASUREMENT:

CONDUCTED TEST			
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION
433 MHz	1	1	ASK

**Note:**

Per 15.31 (e) - For battery operated equipment, the equipment tests shall be performed using a new battery. All test items for this report are performed with a new battery.

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## 5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
Peak Output Power	+/- 0.84 dB
20dB Bandwidth	+/- 51.33 Hz
100 KHz Bandwidth Of Frequency Band Edges	+/- 0.84 dB
Frequency Separation	+/- 51.33 Hz
Number of hopping frequency	+/- 51.33 Hz
Time of Occupancy	+/- 51.33 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC= +/- 0.2%

### Radiated Spurious Emission:

Measurement uncertainty (Polarization : <b>Vertical</b> )	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : <b>Horizontal</b> )	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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## 6. CONDUCTED EMISSIONS TEST (NOT APPLY IN THE REPORT)

### 6.1 Standard Applicable

According to §15.207 and frequency within 150 kHz to 30MHz shall not exceed the limit table as below.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
<b>Note</b> 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

### 6.2 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESC17	100760	05/10/2016	05/09/2017
LISN	SCHWARZBECK	NSLK 8127	8127-649	05/16/2016	05/15/2017
LISN	MESS TEC	FCC-LISN-50/2 50-25-2-01	4034	05/16/2016	05/15/2017
Coaxial Cables	N/A	WK CE Cable	N/A	11/26/2015	11/25/2016

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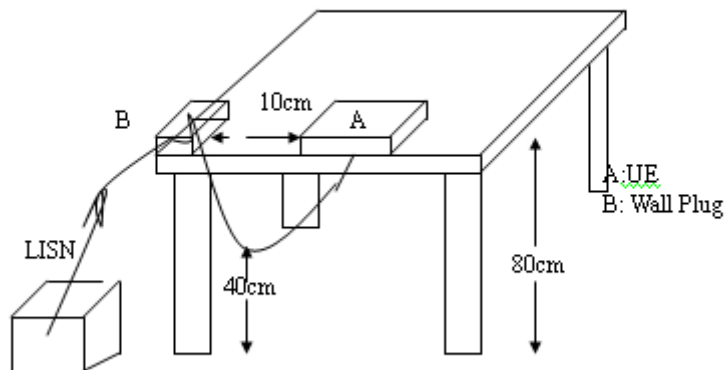
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### 6.3 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

### 6.4 Test SET-UP (Block Diagram of Configuration)



### 6.5 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

### 6.6 Measurement Result

N/A; This device is powered from battery.

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## 7. RADIATED EMISSION TEST

### 7.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. Repeat above procedures until all frequency of the interest measured were complete.

Auxiliary Procedure (Setting on Spectrum to capture the reading of emission level):

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

Test was measured starting from 9kHz to 10<sup>th</sup> harmonic of the fundamental frequency, and data containing the worst result over 30MHz are shown on the test report.

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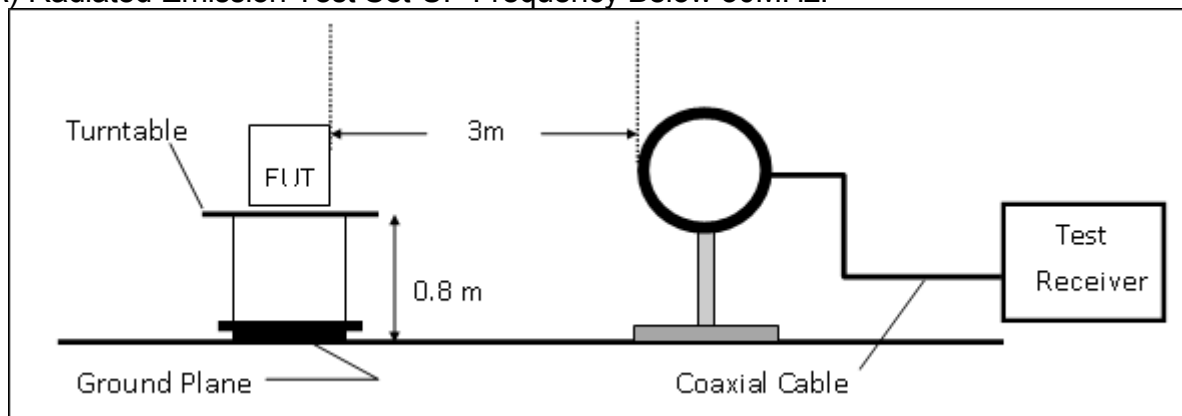
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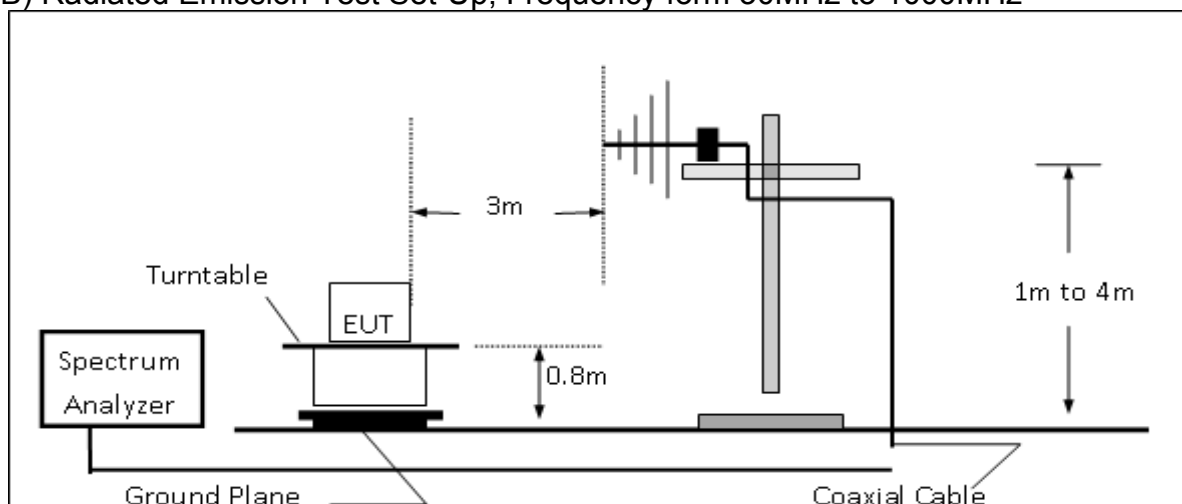


## 7.2 Test SET-UP (Block Diagram of Configuration).

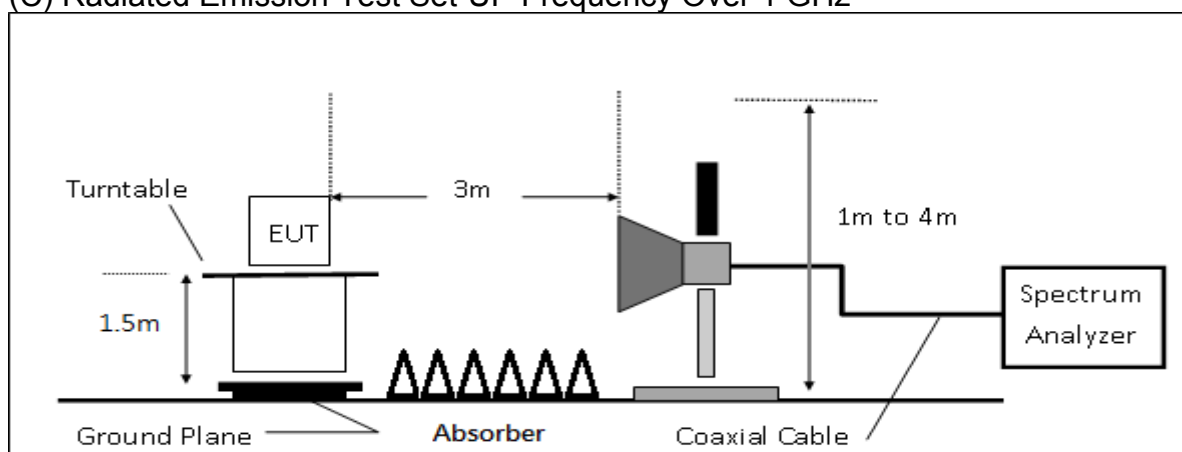
### (A) Radiated Emission Test Set-UP Frequency Below 30MHz.



### (B) Radiated Emission Test Set-UP, Frequency form 30MHz to 1000MHz



### (C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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### 7.3 Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/14/2015	12/13/2016
Horn antenna	ETS.LINDGREN	3117	123991	12/12/2015	12/11/2016
Spectrum Analyzer	R&S	FSV-30	101398	09/23/2015	09/22/2016
Pre-Amplifier	HP	8449B	3008A01973	01/02/2016	01/01/2017
Pre-Amplifier	Agilent	8447D	2944A07676	01/02/2016	01/01/2017
Low Loss Cable	Huber Suhner	966_RX	9	01/02/2016	01/01/2017
Low Loss Cable	Huber Suhner	966 TX	1	01/02/2016	01/01/2017
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Site Cal	SGS	1166 chamber	N/A	01/02/2016	01/01/2017

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## 7.4 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

### Remark:

The limit of the emission level is expressed in dBuV/m, which converts  $20 \cdot \log(uV/m)$

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)

### Note :

“F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---” : denotes Noise Floor.

## 7.5. Test Results of Radiated Spurious Emissions form 9 KHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) was not reported.

## 7.6. Measurement Result:

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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## 7.7. Measurement Result

### Radiated emission Main

Operation Mode : 433 MHz      Test Date : 08/31/2016  
Fundamental Frequency : 433.92 MHz      Temp. / Humi. : 24.5 deg\_C / 57RH  
Operation Band : MAIN      Test Engineer : Kane  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL

Freq.	Note	Decetor Mode	Actual Reading Level	Spectrum FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBμV/m	dBμV/m	dB	dBuV/m	dB
433.89	F	Peak	79.75	83.28	-3.53	100.87	-21.12
433.89	F	Average	73.30	---	-6.45	80.87	-7.57

Note: Average Actual = Peak Actual + Average Factor (-6.45)

Operation Mode : 433 MHz      Test Date : 08/31/2016  
Fundamental Frequency : 433.92 MHz      Temp. / Humi. : 24.5 deg\_C / 57RH  
Operation Band : MAIN      Test Engineer : Kane  
EUT Pol. : H Plane      Measurement Antenna Pol. : HORIZONTAL

Freq.	Note	Decetor Mode	Actual Reading Level	Spectrum FS	Factor	Limit @3m	Margin
MHz	F/H/E/S	QP/AV/PK	dBμV/m	dBμV/m	dB	dBuV/m	dB
433.89	F	Peak	72.95	76.48	-3.53	100.87	-27.92
433.89	F	Average	66.50	---	-6.45	80.87	-14.37

Note: Average Actual = Peak Actual + Average Factor (-6.45)

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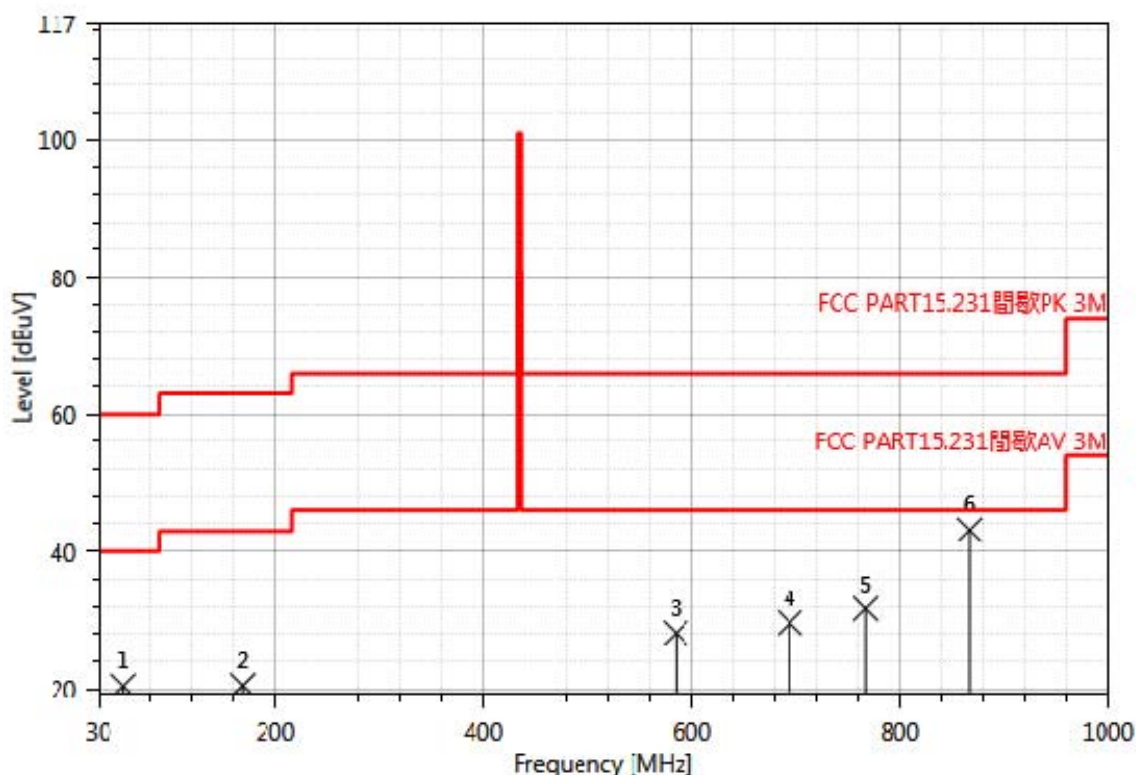
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## Radiated Spurious Emission

Operation Mode : 433 MHz      Test Date : 08/31/2016  
Fundamental Frequency : 433.92 MHz      Temp. / Humi. : 24.5 deg\_C / 57RH  
Operation Band : TX      Test Engineer : Kane  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dBμV/m	Spectrum FS dBμV/m	Factor dB	Limit @3m dBμV/m	Margin dB
54.25	S	Peak	20.42	28.24	-7.82	60.00	-39.58
168.71	S	Peak	20.51	28.03	-7.53	63.00	-42.49
584.84	S	Peak	28.16	28.21	-0.05	66.00	-37.84
694.45	S	Peak	29.62	28.27	1.35	66.00	-36.38
767.20	S	Peak	31.64	28.50	3.14	66.00	-34.36
867.11	H	Peak	43.18	38.43	4.75	66.00	-22.82

Note: Average Actual = Peak Actual + Average Factor (-6.45)

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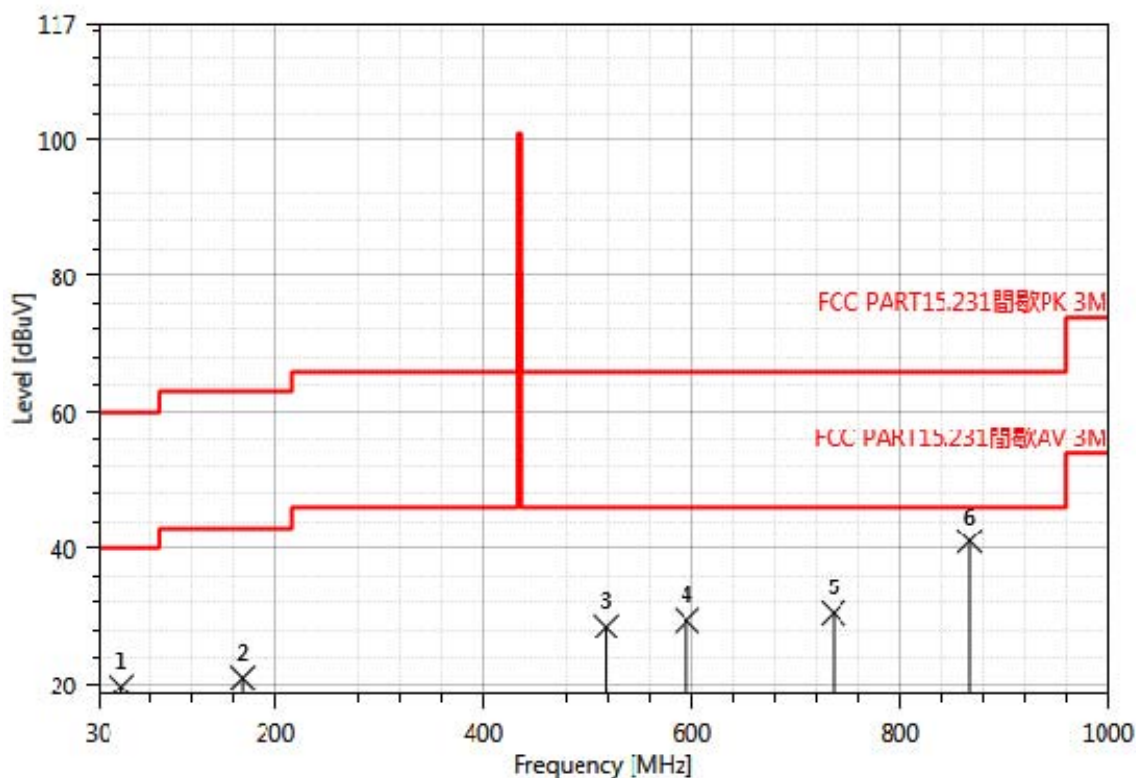
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Operation Mode : 433 MHz      Test Date : 08/31/2016  
Fundamental Frequency : 433.92 MHz      Temp. / Humi. : 24.5 deg\_C / 57RH  
Operation Band : TX      Test Engineer : Kane  
EUT Pol. : H Plane      Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dBμV/m	Spectrum FS dBμV/m	Factor dB	Limit @3m dBuV/m	Margin dB
52.31	S	Peak	19.72	27.49	-7.77	60.00	-40.28
168.71	S	Peak	21.01	28.54	-7.53	63.00	-41.99
517.91	S	Peak	28.50	30.33	-1.83	66.00	-37.50
595.51	S	Peak	29.46	29.42	0.04	66.00	-36.54
736.16	S	Peak	30.52	28.58	1.94	66.00	-35.48
867.11	H	Peak	41.06	36.30	4.75	66.00	-24.94

Note: Average Actual = Peak Actual + Average Factor (-6.45)

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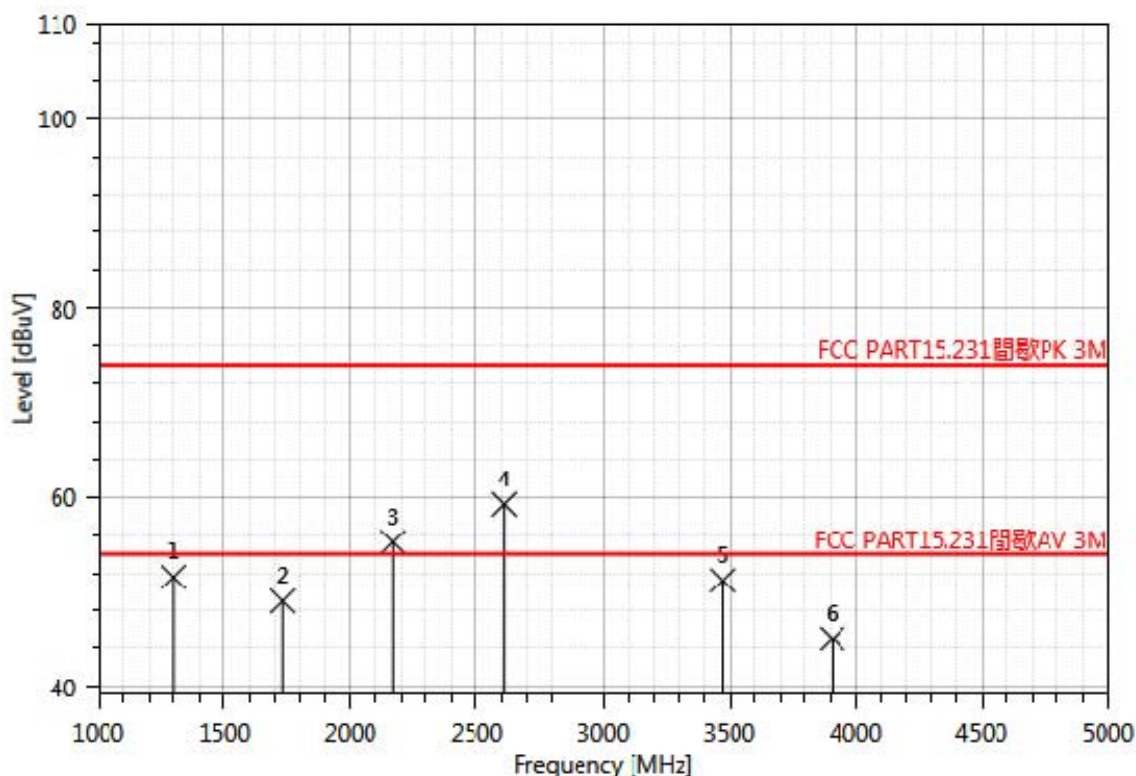
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Operation Mode : 433 MHz      Test Date : 08/31/2016  
Fundamental Frequency : 433.92 MHz      Temp. / Humi. : 24.5 deg\_C / 57RH  
Operation Band : TX      Test Engineer : Kane  
EUT Pol. : H Plane      Measurement Antenna Pol. : VERTICAL



Freq.	Note	Decetor	Actual	Spectrum	Factor	Limit	Margin
MHz	F/H/E/S	Mode	Reading Level	FS	dB	@3m	dB
		QP/AV/PK	dBμV/m	dBμV/m		dBuV/m	
1301.79	H	Peak	51.58	57.15	-5.57	74	-22.42
1735.72	H	Peak	49.03	54.09	-5.06	74	-24.97
2169.65	H	Peak	55.26	57.14	-1.88	74	-18.74
2169.65	F	Aveage	48.81	---	-6.45	54	-5.19
2603.58	H	Peak	59.25	60.56	-1.31	74	-14.75
2603.58	F	Aveage	52.80	---	-6.45	54	-1.20
3471.44	H	Peak	51.21	50.35	0.86	74	-22.79
3905.37	H	Peak	45.06	42.68	2.38	74	-28.94

Note: Average Actual = Peak Actual + Average Factor (-6.45)

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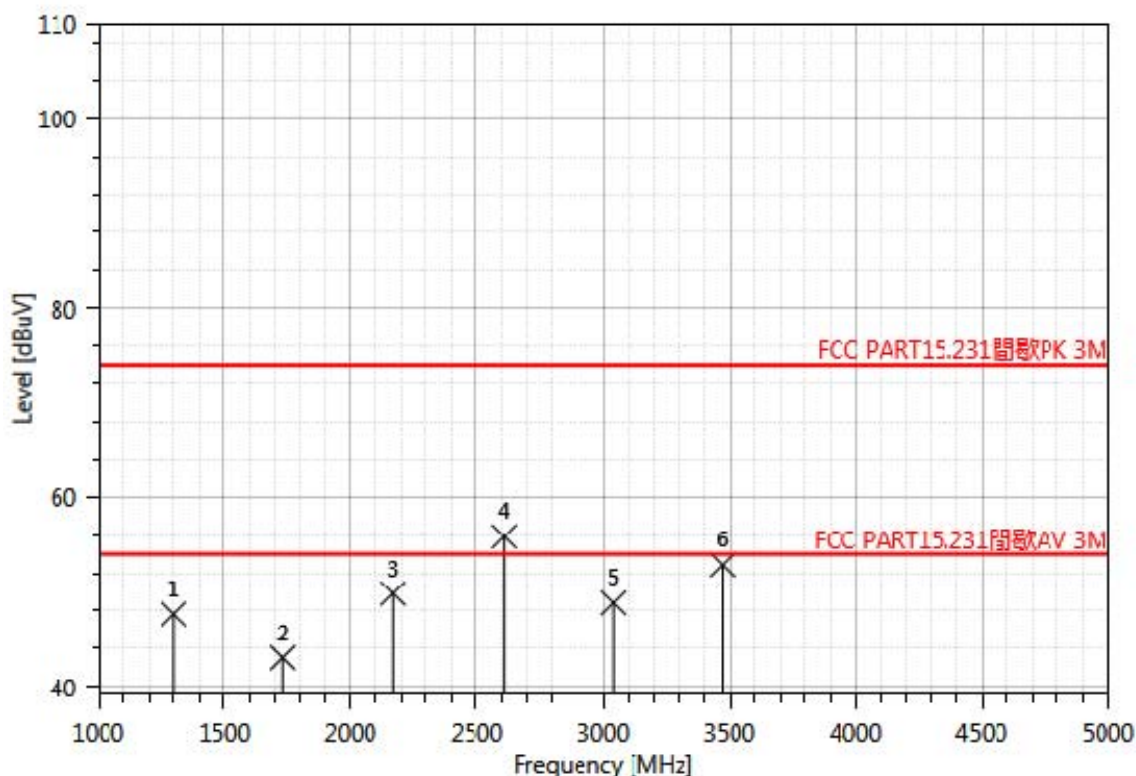
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Operation Mode : 433 MHz      Test Date : 08/31/2016  
Fundamental Frequency : 433.92 MHz      Temp. / Humi. : 24.5 deg\_C / 57RH  
Operation Band : TX      Test Engineer : Kane  
EUT Pol. : H Plane      Measurement Antenna Pol. : HORIZONTAL



Freq. MHz	Note F/H/E/S	Decetor Mode QP/AV/PK	Actual Reading Level dBμV/m	Spectrum FS dBμV/m	Factor dB	Limit @3m dBuV/m	Margin dB
1301.79	H	Peak	47.66	53.23	-5.57	74	-26.34
1735.72	H	Peak	43.03	48.09	-5.06	74	-30.97
2169.65	H	Peak	49.83	51.71	-1.88	74	-24.17
2603.58	H	Peak	55.86	57.17	-1.31	74	-18.14
2603.58	F	Aveage	49.41	---	-6.45	54	-4.59
3037.51	H	Peak	48.82	48.74	0.08	74	-25.18
3471.44	H	Peak	52.86	52	0.86	74	-21.14

Note: Average Actual = Peak Actual + Average Factor (-6.45)

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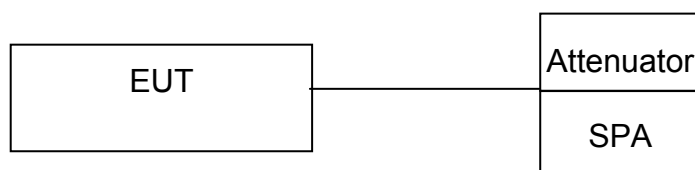
## 8. 20 dB OCCUPIED BANDWIDTH

§15.231 (c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

### 8.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW= 10KHz, Span =100KHz.
4. Set SPA -20dB Occupied bandwidth.

### 8.2 Test SET-UP (Block Diagram of Configuration)



### 8.3 Measurement Equipment Used:

SGS Conducted Emission Test Site No.A					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EXA Spectrum Analyzer	Agilent	N9030A	MY53120760	01/14/2016	01/13/2017
DC Block	Mini-Circuits	BLK-18-S+	1	01/02/2016	01/01/2017

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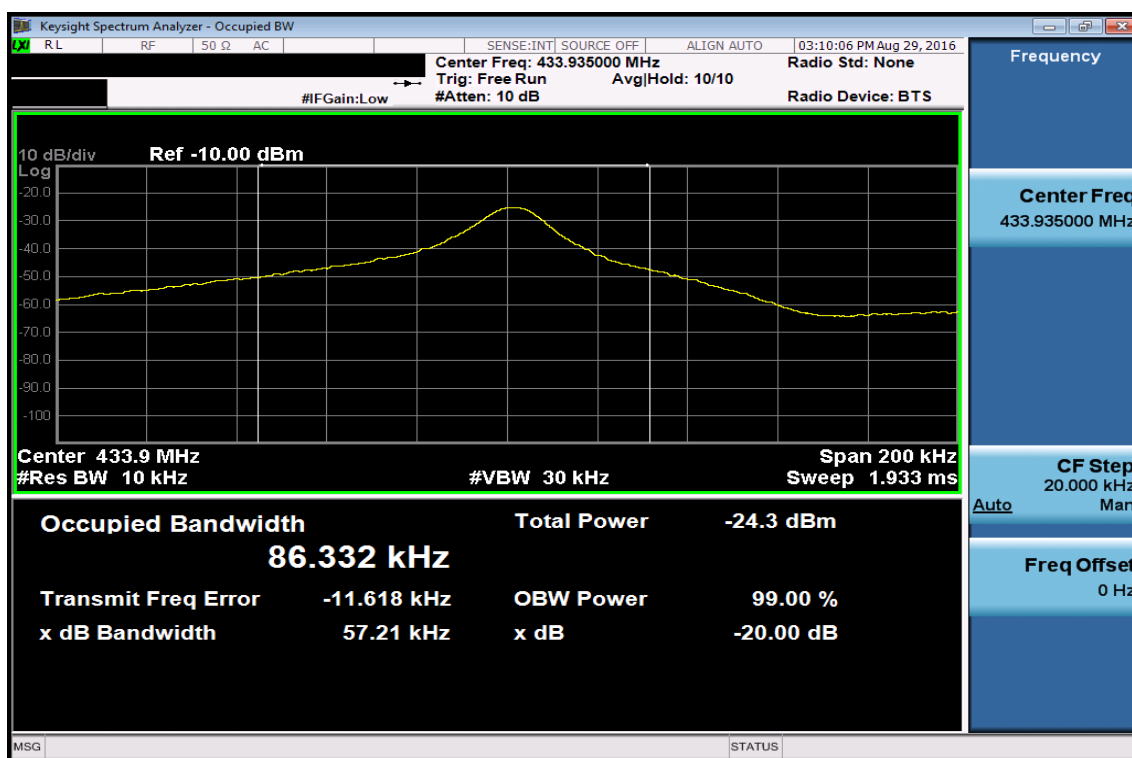
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## 8.4 Measurement Results

Freq.(MHz)	20dB Bandwidth (kHz)	Limit (kHz) = f * 25%
433.92	57.21	1084.8

### 20dB Band Width Test Data (CH Low)



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## 9. DUTY CYCLE MEASUREMENT

### 9.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set ETU normal operating mode.
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW= 100kHz, Span =0 Hz. Adjacent sweep.
4. Set SPA View. Mark delta.

### 9.2 Test SET-UP (Block Diagram of Configuration)

Same as 8.3 Radiated Emission Measurement.

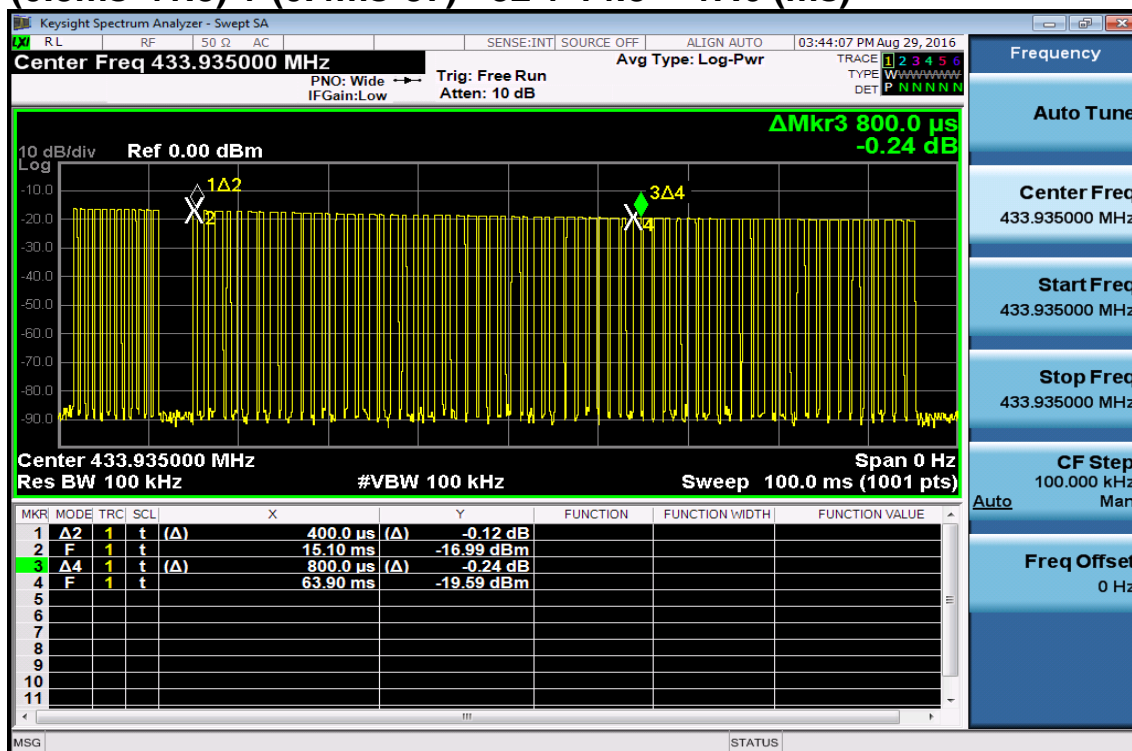
### 9.3 Measurement Equipment Used:

Same as 8.3 Radiated Emission Measurement.

### 9.4 Measurement Results:

Ton (ms)	TP=Ton+Toff (ms)	Avg correction(dB) = 20log(Ton/TP)
47.6	100	-6.45

$$\text{Ton} = (0.8\text{ms} \times 41.8) + (0.4\text{ms} \times 37) = 32 + 14.8 = 47.6 \text{ (ms)}$$



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## 10. RELEASE TIME MEASUREMENT:

15.231 (a) (1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

### 10.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set SPA Center Frequency = fundamental frequency, RBW=100KHz, VBW= 100KHz, Span =0Hz. Sweep Time= 5s.
3. Set EUT as normal operation and press Transmitter bottom for 2 s approximately,
4. Set SPA Max hold. Delta Mark.

### 10.2 Test SET-UP (Block Diagram of Configuration)

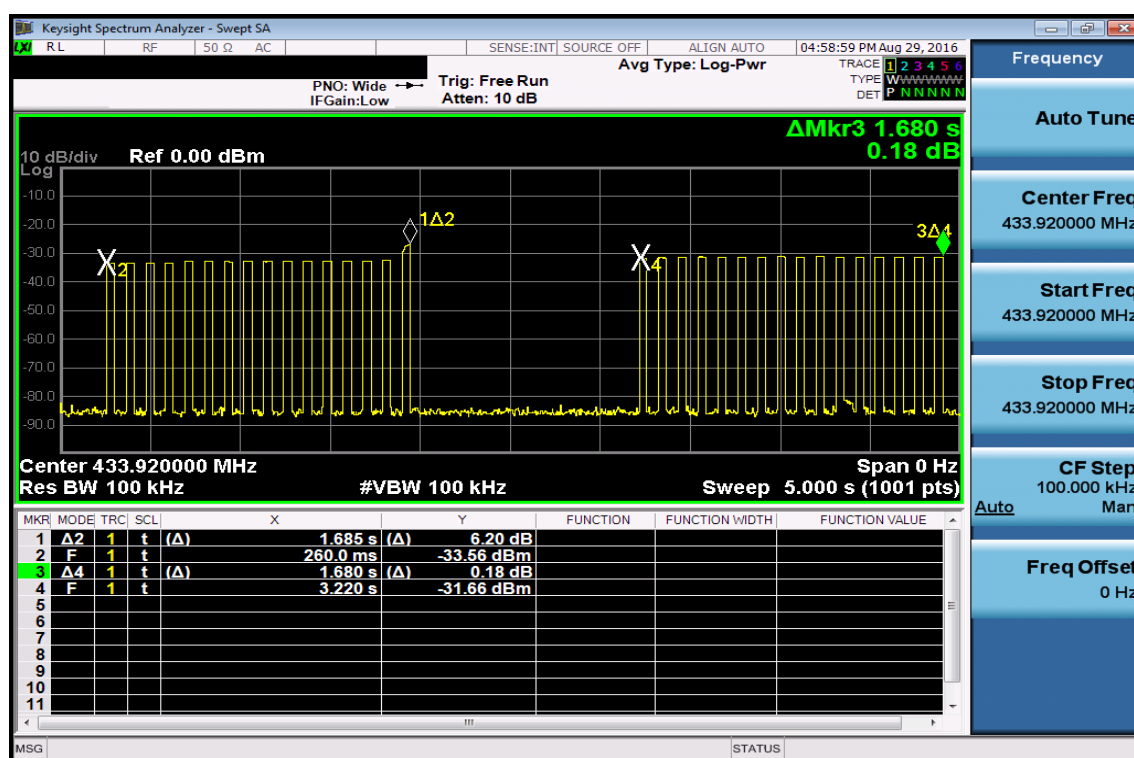
Same as 8.3 Radiated Emission Measurement.

### 10.3 Measurement Equipment Used:

Same as 8.3 Radiated Emission Measurement.

### 10.4 Measurement Results

The release time is less than 5 s.



Note: X = release time

~ End of Report ~

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