



FCC TEST REPORT

FCC ID : SL6-NUC600
Equipment : identiFuel Nozzle Unit Gen 3
Brand Name : HID
Model Name : FNU900
Applicant : HID Global Corporation
611 Center Ridge Drive Austin TX 78753
United States Of America
Manufacturer : HID Global Corporation
47B Gillits Road, Westmead, Durban
3610, South Africa
Standard : 47 CFR FCC Part 15.231

The product was received on Dec. 09, 2020, and testing was started from Jan. 15, 2021 and completed on Mar. 09, 2021. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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APPENDIX A. TEST PHOTOS

PHOTOGRAPHS OF EUT v01



Summary of Test Result

Test Standard: 47 CFR FCC PART 15.231			
Report Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	Antenna Requirement	PASS	-
-	AC Power-line Conducted Emissions	Not Required	Only employ battery power.
3.1	Emission Bandwidth	PASS	-
3.2	Fundamental Emissions	PASS	-
3.3	Transmitter Radiated Unwanted Emissions	PASS	-
3.3.7	Operation Restriction	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
None.

Reviewed by: Sam Tsai
Report Producer: Debby Hung



1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information			
Modulation	Ch. Frequency (MHz)	Channel Number	Fundamental Field Strength (dBuV/m)
FSK	433.92	1	80.45
Note 1: Field strength performed average level at 3m.			

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain
1	HID	PCB antenna for FUN900	PCB antenna	N/A	0

1.1.3 Type of EUT

Operational Condition	
EUT Power Type	From Battery
Type of EUT	
<input checked="" type="checkbox"/>	Stand-alone
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)
	Combined Equipment - Brand Name / Model No.: ...
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)
	Host System - Brand Name / Model No.: ...
<input type="checkbox"/>	Other:

1.1.4 Test Signal Duty Cycle

Operated Mode for Worst Duty Cycle	
<input type="checkbox"/>	Operated normal mode for worst duty cycle
<input checked="" type="checkbox"/>	Operated test mode for worst duty cycle
Test Signal Duty Cycle (x)	Duty Cycle Correction Factor [dB] – (20 log x)
<input checked="" type="checkbox"/> 100%	0



1.2 Testing Applied Standards

Test standard	47 CFR FCC Part 15
Test Method	ANSI C63.10-2013 The following reference test guidance is not within the scope of accreditation of TAF: KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
<input checked="" type="checkbox"/>	Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)		
		TEL: 886-3-327-3456	FAX: 886-3-327-0973	
Test site Designation No. TW1190 with FCC.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Barry	20.1~21.3°C / 57~60%	15/Jan/2021
Radiated	03CH03-HY	Edward	20.1~22.2°C / 50~60%	05/Mar/2021~09/Mar/2021
<input type="checkbox"/>	Wen 33rd.St. (TAF: 3785)	ADD: No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)		
		TEL: 886-3-318-0787	FAX: 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT




2.1 Test Condition

Condition Item	Abbreviation/Remark	Remark
Tnom Vnom	Tnom	20°C
-	Vnom	2.7V

2.2 The Worst Case Modulation Configuration

Modulation Used for Conformance Testing		
Mode	Field Strength (dBuV/m at3m)	Test Channel Frequencies (MHz)
FSK	80.45	433.92

2.3 The Worst Case Measurement Configuration

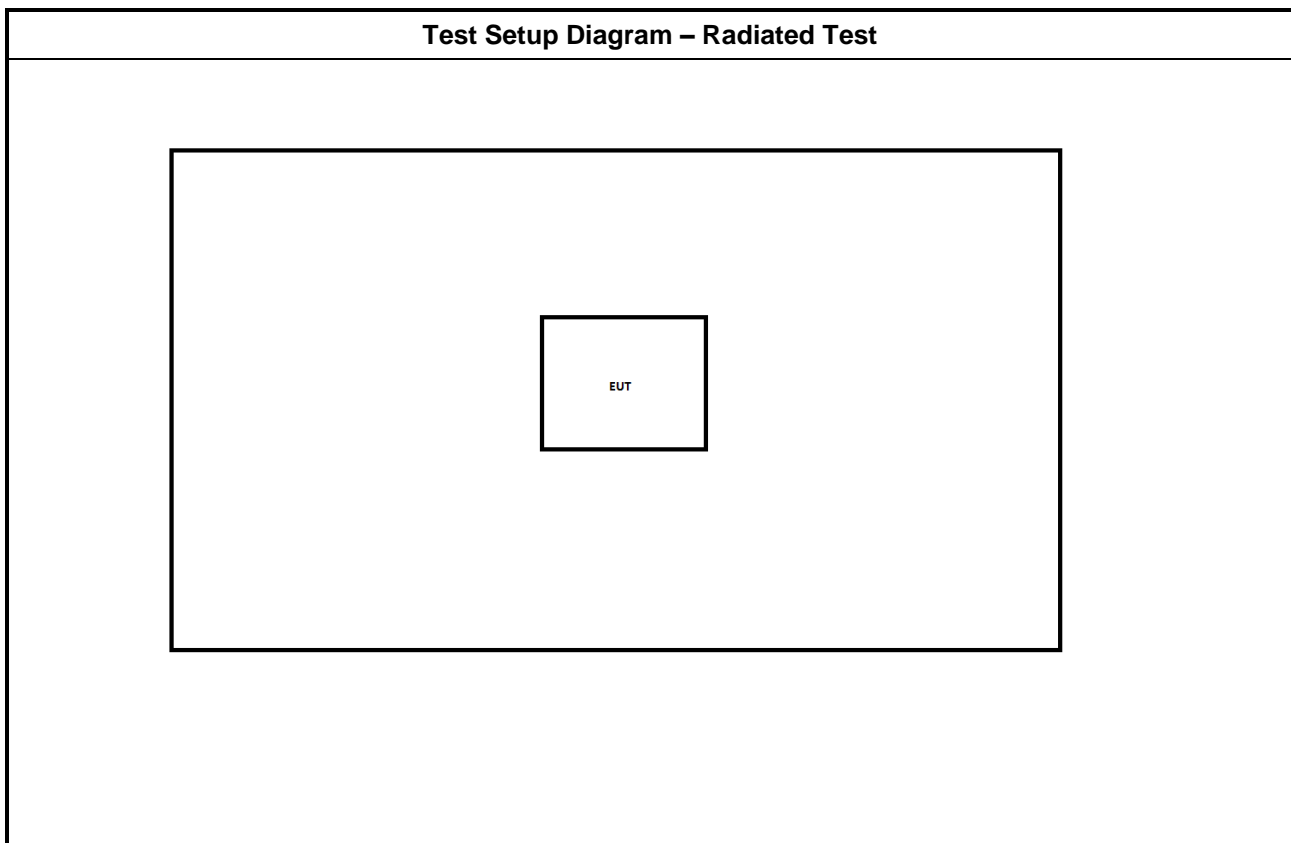
The Worst Case Mode for Following Conformance Tests			
Tests Item	Emission Bandwidth, Fundamental Emissions, Radiated Unwanted Emissions		
Test Condition	Radiated measurement		
User Position	<input type="checkbox"/> EUT will be placed in fixed position.		
	<input checked="" type="checkbox"/> EUT will be placed in mobile position and operating multiple positions.		
	<input type="checkbox"/> EUT will be a hand-held or body-worn battery-powered devices and operating multiple positions.		
Operating Mode	CTX		
	<input checked="" type="checkbox"/> Battery Mode		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Operation Restriction (silent time and operated time)
Test Condition	Conducted measurement
Test Mode	Operated normally mode for worst duty cycle condition.

2.4 Support Equipment

Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Tag	-	-	-	Provided by Customer

2.5 Test Setup Diagram



3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
<input checked="" type="checkbox"/>	Emission bandwidth falls completely within authorized band.
<input checked="" type="checkbox"/>	Fc(70~900MHz): BW ≤ fc x 0.25%
<input type="checkbox"/>	Fc(>900MHz): BW ≤ fc x 0.5%

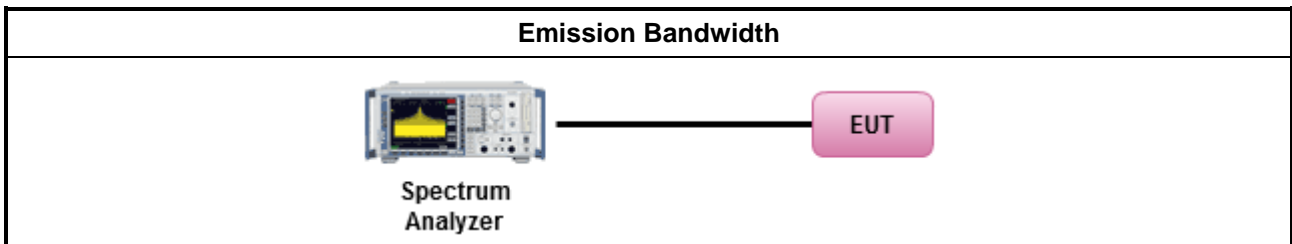
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as ANSI C63.10-2013, clause 6.9.3 for 20 dB emission bandwidth and 99% occupied bandwidth measurement.

3.1.4 Test Setup



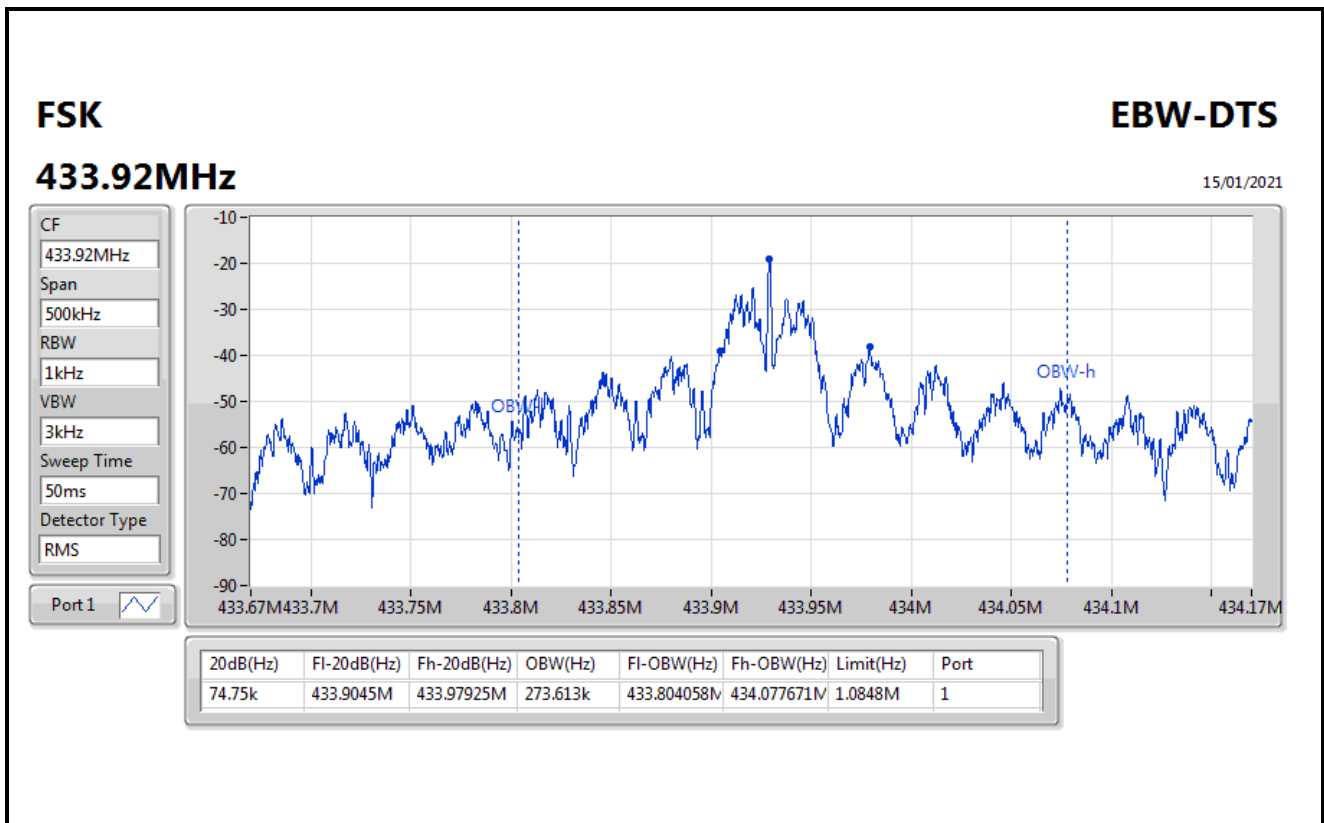
3.1.5 Test Result of Emission Bandwidth

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
0.4G	-	-	-	-	-
FSK	74.75k	273.613k	274KF1D	74.75k	273.613k

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
FSK	-	-	-	-
433.92MHz	Pass	1.0848M	74.75k	273.613k





3.2 Fundamental Emissions

3.2.1 Fundamental Emissions Limit

For manually operated within 5 sec, activated automatically within 5 sec, periodic transmissions		
Frequency Band (MHz)	Fundamental Limit (uV/m) at 3m	Fundamental Limit (dBuV/m) at 3m
40.66-40.70	2250	67
70-130	1250	61.9
130-174	1250-3750(**)	61.9-71.5
174-260	3750	71.5
260-470	3750-12500(**)	71.5-81.9
Above 470	12500	81.9

**1. Linear interpolations.
Based on the average value of the measured emissions.

For periodic transmissions (lower field strength)		
Frequency Band (MHz)	Fundamental Limit (uV/m) at 3m	Fundamental Limit (dBuV/m) at 3m
40.66-40.70	1000	60
70-130	500	54
130-174	500-1500(**)	54-63.5
174-260	1500	63.5
260-470	1500-5000(**)	63.5-74
Above 470	5000	74

** 1. Linear interpolations.
Based on the average value of the measured emissions.

3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

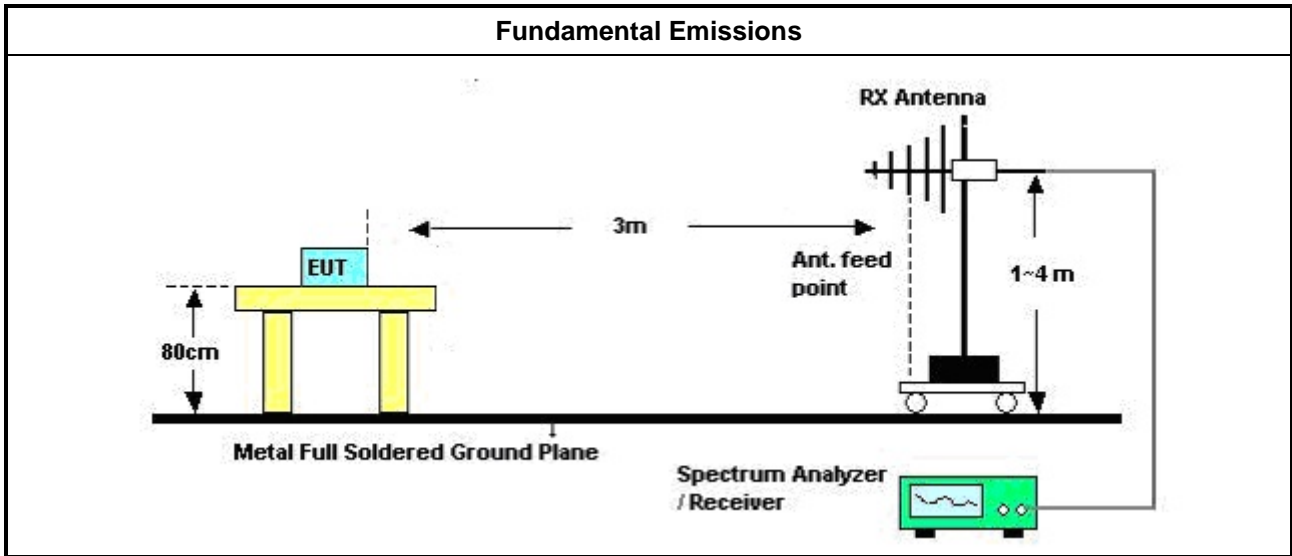
<input checked="" type="checkbox"/>	For the transmitter emissions shall be measured using following options below:
<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW) – Duty cycle ≥ 100%.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms). Average emission = peak emission + 20 log (duty cycle).
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
<input checked="" type="checkbox"/>	For radiated measurement, refer as ANSI C63.10, clause 6.5 for radiated emissions

3.2.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

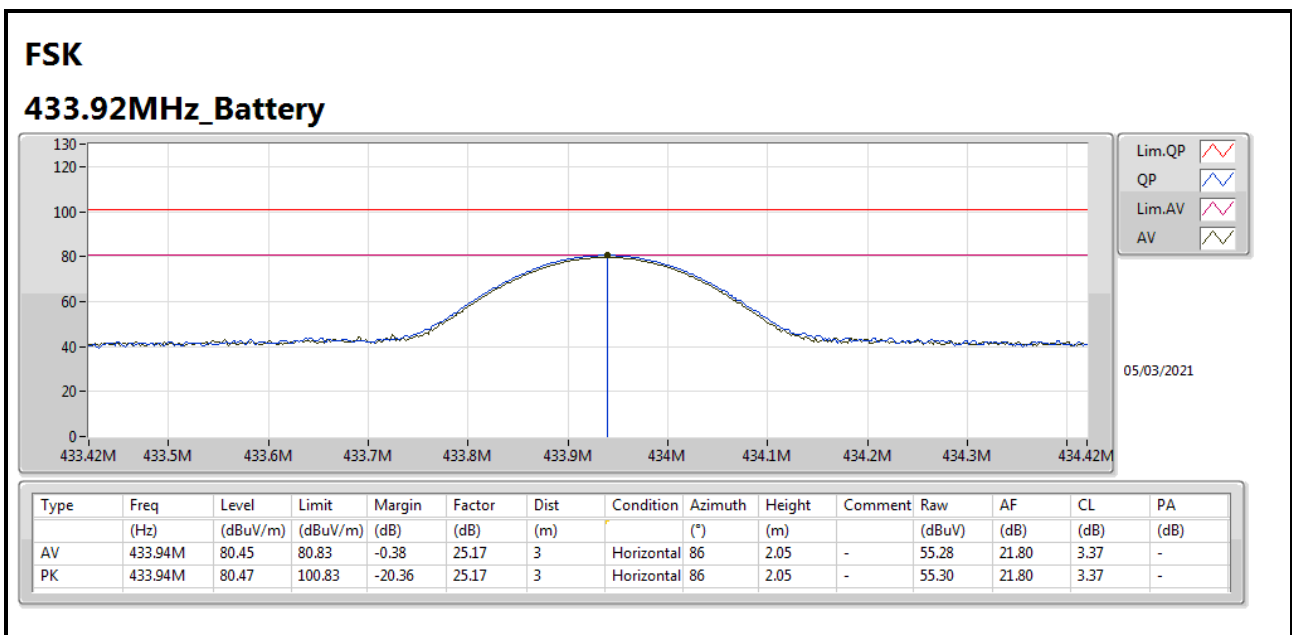
3.2.5 Test Setup



3.2.6 Test Result of Fundamental Emissions

Field Strength of Fundamental Emissions Result					
Modulation Mode	Frequency (MHz)	Fundamental (dBuV/m)@3m	Margin (dB)	Limit (dBuV/m)@3m	Type
FSK	433.92	80.45	0.38	80.83	Average
FSK	433.92	80.47	20.36	100.83	Peak
Result		Complied			

Note 1: Measurement worst emissions of receive antenna polarization: Horizontal
 Note 2: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).



3.3 Transmitter Radiated Unwanted Emissions

3.3.1 Transmitter Radiated Unwanted Emissions Limit

For manually operated within 5 sec, activated automatically within 5 sec, periodic transmissions		
Unwanted emissions limit follow this table or the general limits FCC 15.209, whichever limit permits higher field strength.		
Frequency Band (MHz)	Spurious Limit (uV/m) at 3m	Spurious Limit (dBuV/m) at 3m
40.66-40.70	225	47
70-130	125	41.9
130-174	125-375(**)	41.9-51.5
174-260	375	51.5
260-470	375-1250(**)	51.5-61.9
Above 470	1250	61.9
**1. Linear interpolations. Based on the average value of the measured emissions.		

For periodic transmissions (lower field strength)		
Unwanted emissions limit follow this table or the general limits FCC 15.209, whichever limit permits higher field strength.		
Frequency Band (MHz)	Spurious Limit (uV/m) at 3m	Spurious Limit (dBuV/m) at 3m
40.66-40.70	100	40
70-130	50	34
130-174	50-150(**)	34-43.5
174-260	150	43.5
260-470	150-500(**)	43.5-54
Above 470	500	54
** 1. Linear interpolations Based on the average value of the measured emissions.		

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

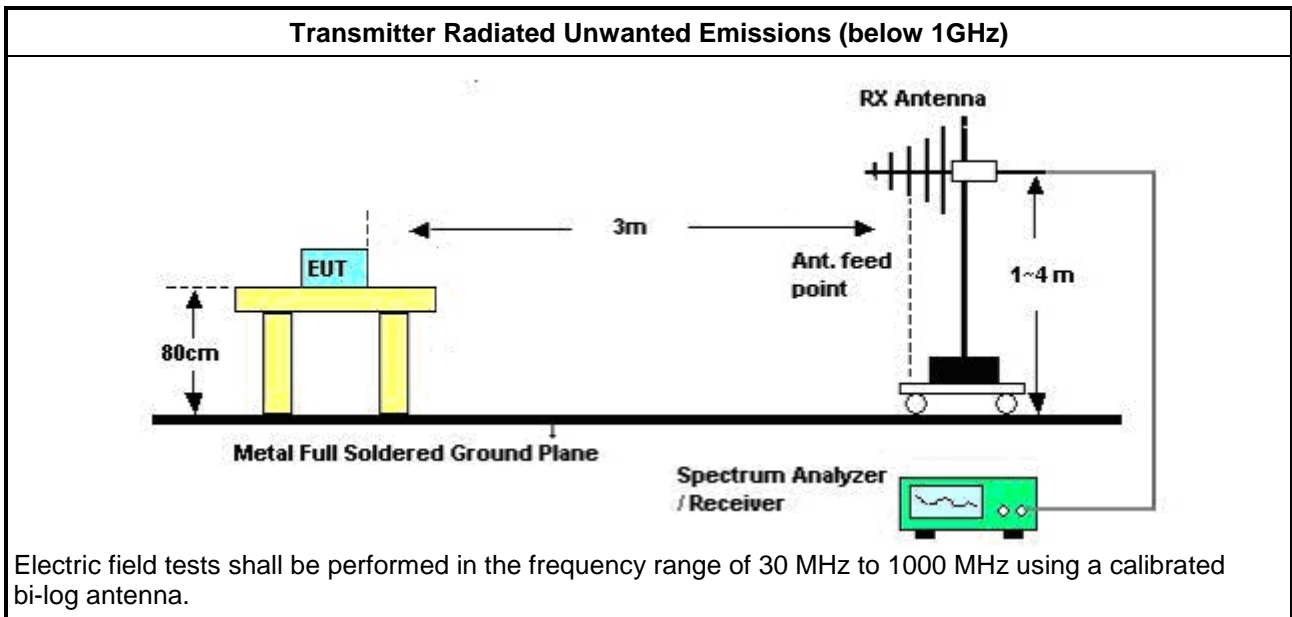
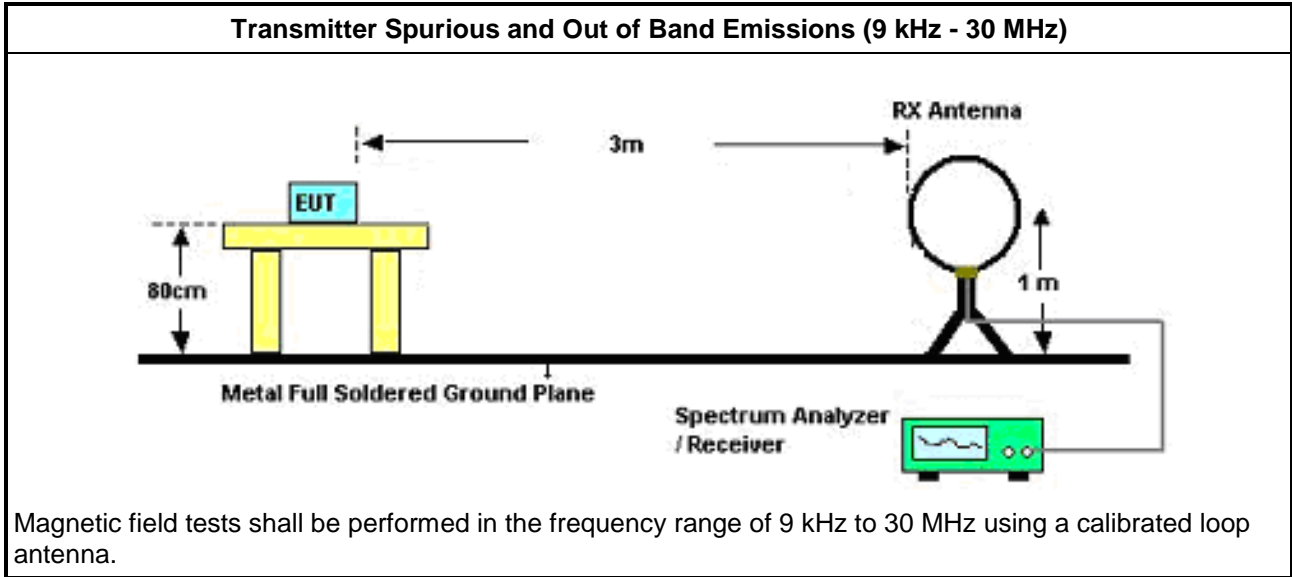
Test Method – General Information	
<input checked="" type="checkbox"/>	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.10.3 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
<input checked="" type="checkbox"/>	For the transmitter unwanted emissions shall be measured using following options below:
<input type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW) – Duty cycle ≥ 100%.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms). Average emission = peak emission + 20 log (duty cycle).
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
<input checked="" type="checkbox"/>	For the transmitter bandedge emissions shall be measured using following options below:
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.10 for band-edge testing.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.10.6.2 for marker-delta method for band-edge measurements.
<input checked="" type="checkbox"/>	For radiated measurement.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1 GHz and test distance is 3m.
<input checked="" type="checkbox"/>	The any unwanted emissions level shall not exceed the fundamental emission level.
<input checked="" type="checkbox"/>	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
<input type="checkbox"/>	<ul style="list-style-type: none"> ▪ KDB 414788 Open-Field Test Sites and Chamber Correlation Justification. <ul style="list-style-type: none"> ▪ Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field. ▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

3.3.4 Measurement Results Calculation

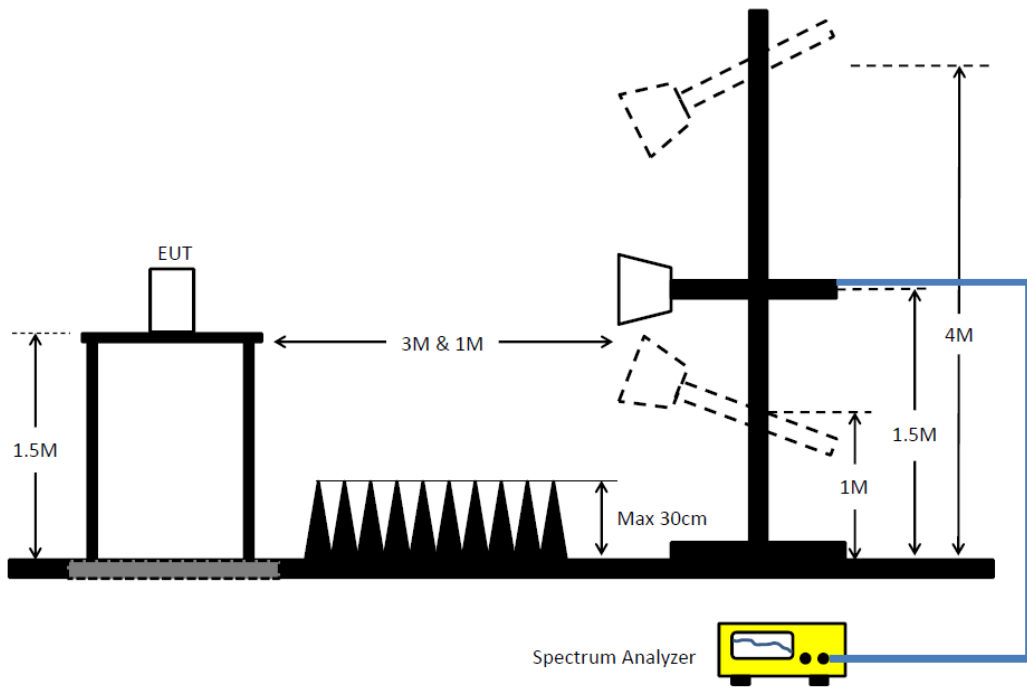
The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.3.5 Test Setup



Transmitter Radiated Unwanted Emissions (Above 1GHz)



Electric field tests shall be performed in the frequency range of 1 GHz to 10th harmonic of highest fundamental frequency or 40 GHz using a calibrated horn antenna.



3.3.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
0.4G	-	-	-	-	-	-	-	-	-	-	-
SRD_Nss1_1TX	Pass	AV	433.94M	80.45	80.83	-0.38	3	Horizontal	86	2.05	-

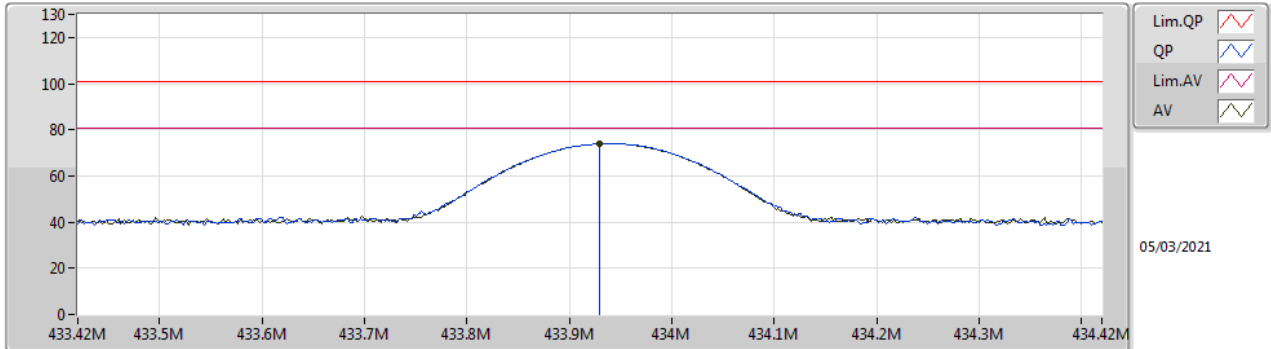
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
SRD_Nss1_1TX	-	-	-	-	-	-	-	-	-	-	-
433.92MHz	Pass	AV	433.93M	73.96	80.83	-6.87	3	Vertical	127	1.02	-
433.92MHz	Pass	PK	433.93M	73.98	100.83	-26.85	3	Vertical	127	1.02	-
433.92MHz	Pass	AV	433.94M	80.45	80.83	-0.38	3	Horizontal	86	2.05	-
433.92MHz	Pass	PK	433.94M	80.47	100.83	-20.36	3	Horizontal	86	2.05	-
433.92MHz	Pass	AV	867.87M	24.98	60.83	-35.85	3	Vertical	70	1.09	-
433.92MHz	Pass	PK	867.84M	32.66	80.83	-48.17	3	Vertical	70	1.09	-
433.92MHz	Pass	AV	867.88M	29.06	60.83	-31.77	3	Horizontal	88	1.00	-
433.92MHz	Pass	PK	867.88M	33.97	80.83	-46.86	3	Horizontal	88	1.00	-
433.92MHz	Pass	PK	30M	24.82	40.00	-15.18	3	Vertical	0	1.00	-
433.92MHz	Pass	PK	171.62M	19.99	43.50	-23.51	3	Vertical	0	1.00	-
433.92MHz	Pass	PK	260.86M	20.40	46.00	-25.60	3	Vertical	0	1.00	-
433.92MHz	Pass	PK	371.44M	25.04	46.00	-20.96	3	Vertical	0	1.00	-
433.92MHz	Pass	PK	536.34M	26.94	46.00	-19.06	3	Vertical	0	1.00	-
433.92MHz	Pass	PK	646.92M	27.72	46.00	-18.28	3	Vertical	0	1.00	-
433.92MHz	Pass	PK	39.7M	27.11	40.00	-12.89	3	Horizontal	360	1.00	-
433.92MHz	Pass	PK	123.12M	18.70	43.50	-24.80	3	Horizontal	360	1.00	-
433.92MHz	Pass	PK	270.56M	20.57	46.00	-25.43	3	Horizontal	360	1.00	-
433.92MHz	Pass	PK	549.92M	26.93	46.00	-19.07	3	Horizontal	360	1.00	-
433.92MHz	Pass	PK	629.46M	27.91	46.00	-18.09	3	Horizontal	360	1.00	-
433.92MHz	Pass	PK	716.76M	29.00	46.00	-17.00	3	Horizontal	360	1.00	-



SRD_Nss1_1TX

433.92MHz_Battery

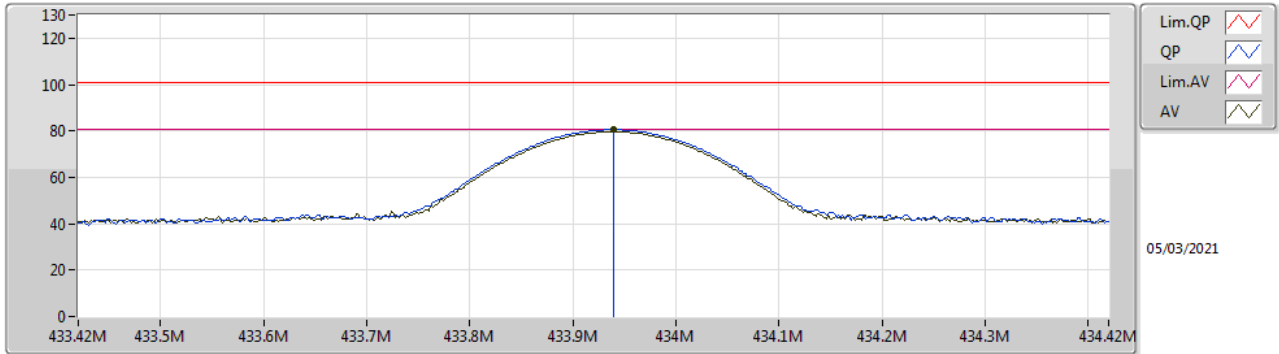


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	433.93M	73.96	80.83	-6.87	25.17	3	Vertical	127	1.02	-	48.79	21.80	3.37	-
PK	433.93M	73.98	100.83	-26.85	25.17	3	Vertical	127	1.02	-	48.81	21.80	3.37	-



SRD_Nss1_1TX

433.92MHz_Battery

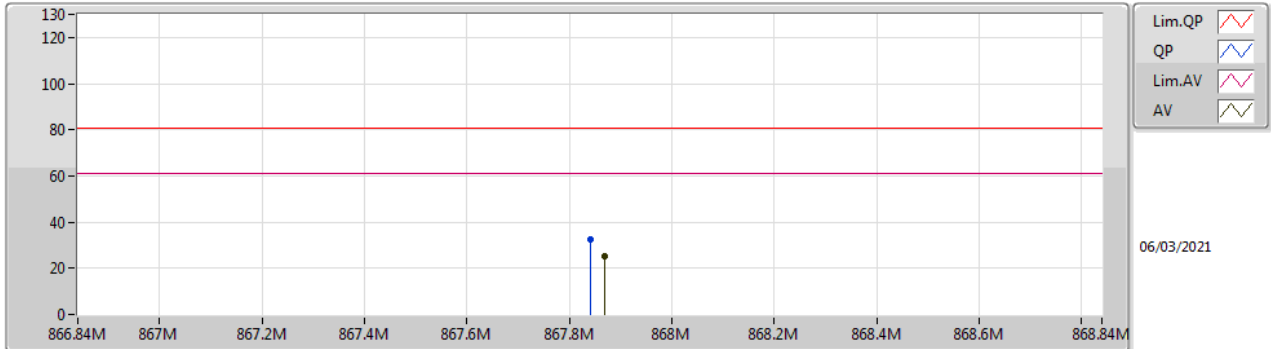


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	433.94M	80.45	80.83	-0.38	25.17	3	Horizontal	86	2.05	-	55.28	21.80	3.37	-
PK	433.94M	80.47	100.83	-20.36	25.17	3	Horizontal	86	2.05	-	55.30	21.80	3.37	-



SRD_Nss1_1TX

433.92MHz_Battery

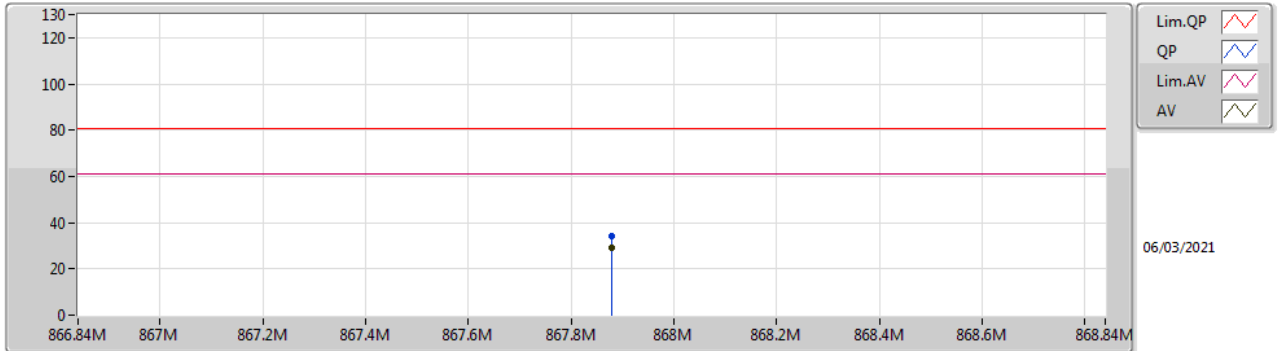


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	867.87M	24.98	60.83	-35.85	2.85	3	Vertical	70	1.09	-	22.13	25.51	4.94	27.60
PK	867.84M	32.66	80.83	-48.17	2.85	3	Vertical	70	1.09	-	29.81	25.51	4.94	27.60



SRD_Nss1_1TX

433.92MHz_Battery

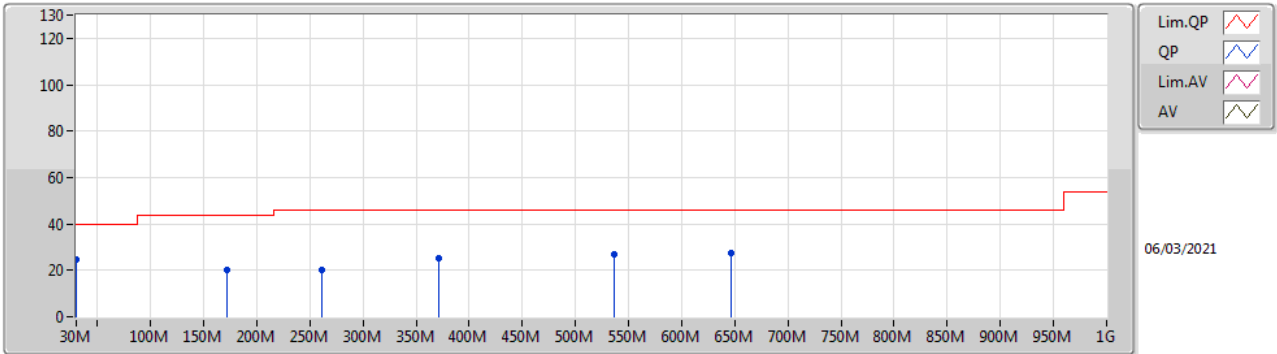


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (*)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	867.88M	29.06	60.83	-31.77	2.85	3	Horizontal	88	1.00	-	26.21	25.51	4.94	27.60
PK	867.88M	33.97	80.83	-46.86	2.85	3	Horizontal	88	1.00	-	31.12	25.51	4.94	27.60



SRD_Nss1_1TX

433.92MHz_Battery

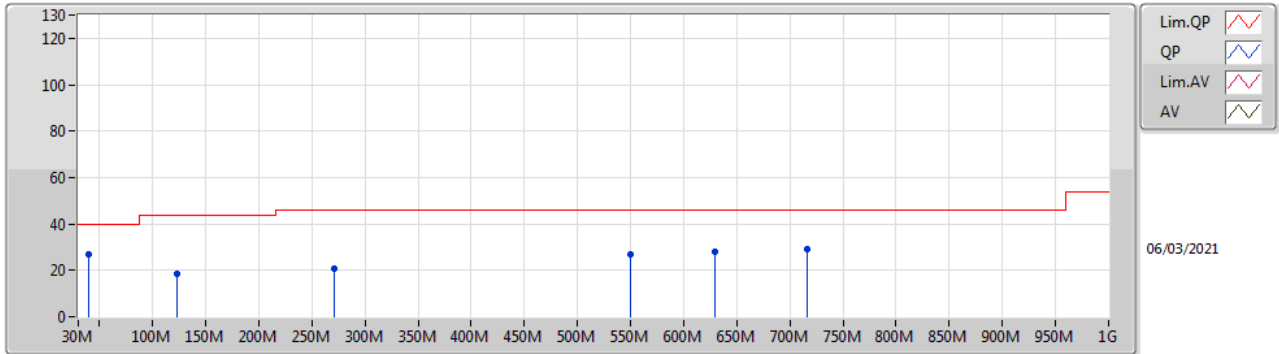


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	30M	24.82	40.00	-15.18	-3.36	3	Vertical	0	1.00	-	28.18	23.32	0.90	27.58
PK	171.62M	19.99	43.50	-23.51	-10.12	3	Vertical	0	1.00	-	30.11	14.83	2.12	27.07
PK	260.86M	20.40	46.00	-25.60	-5.28	3	Vertical	0	1.00	-	25.68	18.75	2.67	26.70
PK	371.44M	25.04	46.00	-20.96	-3.85	3	Vertical	0	1.00	-	28.89	20.03	3.19	27.07
PK	536.34M	26.94	46.00	-19.06	-1.01	3	Vertical	0	1.00	-	27.95	23.10	3.85	27.96
PK	646.92M	27.72	46.00	-18.28	0.43	3	Vertical	0	1.00	-	27.29	24.23	4.29	28.09



SRD_Nss1_1TX

433.92MHz_Battery



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	39.7M	27.11	40.00	-12.89	-8.67	3	Horizontal	360	1.00	-	35.78	17.89	0.99	27.55
PK	123.12M	18.70	43.50	-24.80	-8.07	3	Horizontal	360	1.00	-	26.77	17.39	1.82	27.28
PK	270.56M	20.57	46.00	-25.43	-5.91	3	Horizontal	360	1.00	-	26.48	18.06	2.72	26.69
PK	549.92M	26.93	46.00	-19.07	-0.15	3	Horizontal	360	1.00	-	27.08	23.97	3.90	28.02
PK	629.46M	27.91	46.00	-18.09	0.53	3	Horizontal	360	1.00	-	27.38	24.37	4.22	28.06
PK	716.76M	29.00	46.00	-17.00	0.79	3	Horizontal	360	1.00	-	28.21	24.31	4.47	27.99



3.3.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

Summary

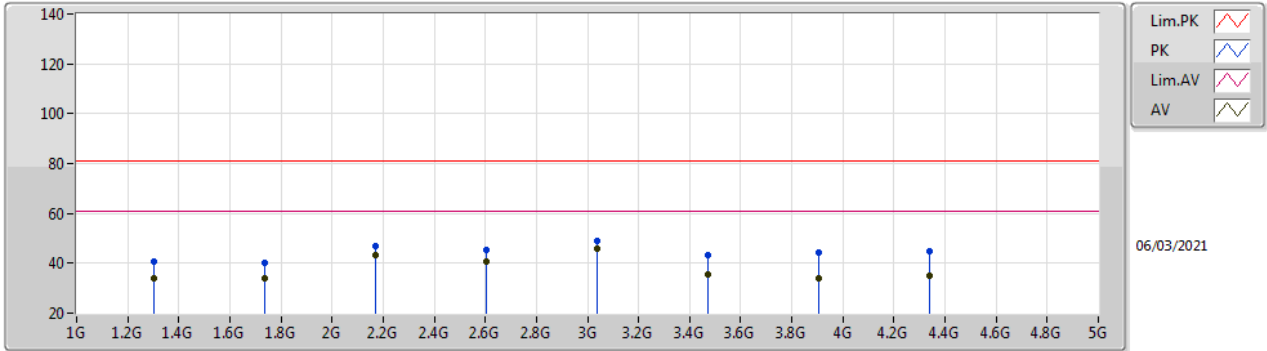
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
0.4G	-	-	-	-	-	-	-	-	-	-	-
SRD_Nss1_1TX	Pass	AV	2.16969G	46.71	60.83	-14.12	3	Horizontal	200	1.28	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
SRD_Nss1_1TX	-	-	-	-	-	-	-	-	-	-	-
433.92MHz	Pass	AV	1.30181G	33.93	60.83	-26.90	3	Vertical	330	1.50	-
433.92MHz	Pass	AV	1.73575G	33.72	60.83	-27.11	3	Vertical	179	1.25	-
433.92MHz	Pass	AV	2.16969G	43.16	60.83	-17.67	3	Vertical	146	1.16	-
433.92MHz	Pass	AV	2.60363G	40.55	60.83	-20.28	3	Vertical	164	2.14	-
433.92MHz	Pass	AV	3.03755G	45.90	60.83	-14.93	3	Vertical	202	1.67	-
433.92MHz	Pass	AV	3.47149G	35.55	60.83	-25.28	3	Vertical	196	2.21	-
433.92MHz	Pass	AV	3.90536G	33.81	60.83	-27.02	3	Vertical	319	2.18	-
433.92MHz	Pass	AV	4.3394G	35.04	60.83	-25.79	3	Vertical	191	2.26	-
433.92MHz	Pass	PK	1.30191G	40.60	80.83	-40.23	3	Vertical	330	1.50	-
433.92MHz	Pass	PK	1.73585G	40.34	80.83	-40.49	3	Vertical	179	1.25	-
433.92MHz	Pass	PK	2.16964G	46.82	80.83	-34.01	3	Vertical	146	1.16	-
433.92MHz	Pass	PK	2.60358G	45.34	80.83	-35.49	3	Vertical	164	2.14	-
433.92MHz	Pass	PK	3.03755G	49.18	80.83	-31.65	3	Vertical	202	1.67	-
433.92MHz	Pass	PK	3.47168G	43.46	80.83	-37.37	3	Vertical	196	2.21	-
433.92MHz	Pass	PK	3.90539G	44.38	80.83	-36.45	3	Vertical	319	2.18	-
433.92MHz	Pass	PK	4.3395G	45.01	80.83	-35.82	3	Vertical	191	2.26	-
433.92MHz	Pass	AV	1.30182G	34.12	60.83	-26.71	3	Horizontal	130	1.50	-
433.92MHz	Pass	AV	1.73575G	35.47	60.83	-25.36	3	Horizontal	225	1.19	-
433.92MHz	Pass	AV	2.16969G	46.71	60.83	-14.12	3	Horizontal	200	1.28	-
433.92MHz	Pass	AV	2.60364G	35.93	60.83	-24.90	3	Horizontal	113	1.08	-
433.92MHz	Pass	AV	3.03755G	44.89	60.83	-15.94	3	Horizontal	218	1.10	-
433.92MHz	Pass	AV	3.47147G	31.54	60.83	-29.29	3	Horizontal	216	2.59	-
433.92MHz	Pass	AV	3.90544G	40.08	60.83	-20.75	3	Horizontal	155	1.05	-
433.92MHz	Pass	AV	4.33931G	32.45	60.83	-28.38	3	Horizontal	215	1.09	-
433.92MHz	Pass	PK	1.30195G	40.89	80.83	-39.94	3	Horizontal	130	1.50	-
433.92MHz	Pass	PK	1.73569G	41.84	80.83	-38.99	3	Horizontal	225	1.19	-
433.92MHz	Pass	PK	2.16965G	49.59	80.83	-31.24	3	Horizontal	200	1.28	-
433.92MHz	Pass	PK	2.60365G	43.11	80.83	-37.72	3	Horizontal	113	1.08	-
433.92MHz	Pass	PK	3.03754G	48.41	80.83	-32.42	3	Horizontal	218	1.10	-
433.92MHz	Pass	PK	3.47182G	42.38	80.83	-38.45	3	Horizontal	216	2.59	-
433.92MHz	Pass	PK	3.90531G	46.44	80.83	-34.39	3	Horizontal	155	1.05	-
433.92MHz	Pass	PK	4.34068G	44.17	80.83	-36.66	3	Horizontal	215	1.09	-

SRD_Nss1_1TX

433.92MHz_TX

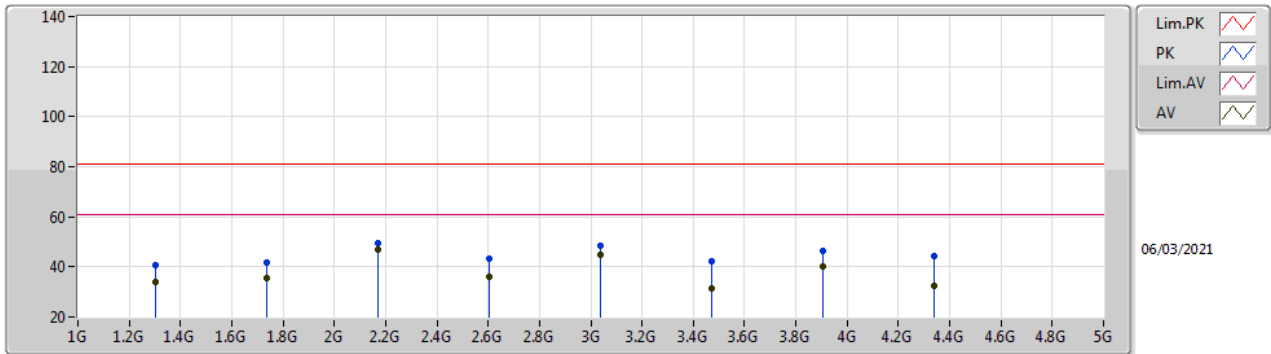


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	1.30181G	33.93	60.83	-26.90	-2.87	3	Vertical	330	1.50	-	36.80	25.81	3.05	31.73
AV	1.73575G	33.72	60.83	-27.11	-1.94	3	Vertical	179	1.25	-	35.66	25.04	3.60	30.58
AV	2.16969G	43.16	60.83	-17.67	2.00	3	Vertical	146	1.16	-	41.16	28.06	4.07	30.13
AV	2.60363G	40.55	60.83	-20.28	2.18	3	Vertical	164	2.14	-	38.37	27.61	4.50	29.93
AV	3.03755G	45.90	60.83	-14.93	3.70	3	Vertical	202	1.67	-	42.20	28.48	5.04	29.82
AV	3.47149G	35.55	60.83	-25.28	4.12	3	Vertical	196	2.21	-	31.43	28.43	5.44	29.75
AV	3.90536G	33.81	60.83	-27.02	6.00	3	Vertical	319	2.18	-	27.81	29.51	5.91	29.42
AV	4.3394G	35.04	60.83	-25.79	7.19	3	Vertical	191	2.26	-	27.85	30.28	6.24	29.33
PK	1.30191G	40.60	80.83	-40.23	-2.86	3	Vertical	330	1.50	-	43.46	25.82	3.05	31.73
PK	1.73585G	40.34	80.83	-40.49	-1.94	3	Vertical	179	1.25	-	42.28	25.04	3.60	30.58
PK	2.16964G	46.82	80.83	-34.01	2.00	3	Vertical	146	1.16	-	44.82	28.06	4.07	30.13
PK	2.60358G	45.34	80.83	-35.49	2.18	3	Vertical	164	2.14	-	43.16	27.61	4.50	29.93
PK	3.03755G	49.18	80.83	-31.65	3.70	3	Vertical	202	1.67	-	45.48	28.48	5.04	29.82
PK	3.47168G	43.46	80.83	-37.37	4.12	3	Vertical	196	2.21	-	39.34	28.43	5.44	29.75
PK	3.90539G	44.38	80.83	-36.45	6.00	3	Vertical	319	2.18	-	38.38	29.51	5.91	29.42
PK	4.3395G	45.01	80.83	-35.82	7.19	3	Vertical	191	2.26	-	37.82	30.28	6.24	29.33



SRD_Nss1_1TX

433.92MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	1.30182G	34.12	60.83	-26.71	-2.87	3	Horizontal	130	1.50	-	36.99	25.81	3.05	31.73
AV	1.73575G	35.47	60.83	-25.36	-1.94	3	Horizontal	225	1.19	-	37.41	25.04	3.60	30.58
AV	2.16969G	46.71	60.83	-14.12	2.00	3	Horizontal	200	1.28	-	44.71	28.06	4.07	30.13
AV	2.60364G	35.93	60.83	-24.90	2.18	3	Horizontal	113	1.08	-	33.75	27.61	4.50	29.93
AV	3.03755G	44.89	60.83	-15.94	3.70	3	Horizontal	218	1.10	-	41.19	28.48	5.04	29.82
AV	3.47147G	31.54	60.83	-29.29	4.12	3	Horizontal	216	2.59	-	27.42	28.43	5.44	29.75
AV	3.90544G	40.08	60.83	-20.75	6.00	3	Horizontal	155	1.05	-	34.08	29.51	5.91	29.42
AV	4.33931G	32.45	60.83	-28.38	7.19	3	Horizontal	215	1.09	-	25.26	30.28	6.24	29.33
PK	1.30195G	40.89	80.83	-39.94	-2.86	3	Horizontal	130	1.50	-	43.75	25.82	3.05	31.73
PK	1.73569G	41.84	80.83	-38.99	-1.94	3	Horizontal	225	1.19	-	43.78	25.04	3.60	30.58
PK	2.16965G	49.59	80.83	-31.24	2.00	3	Horizontal	200	1.28	-	47.59	28.06	4.07	30.13
PK	2.60365G	43.11	80.83	-37.72	2.18	3	Horizontal	113	1.08	-	40.93	27.61	4.50	29.93
PK	3.03754G	48.41	80.83	-32.42	3.70	3	Horizontal	218	1.10	-	44.71	28.48	5.04	29.82
PK	3.47182G	42.38	80.83	-38.45	4.12	3	Horizontal	216	2.59	-	38.26	28.43	5.44	29.75
PK	3.90531G	46.44	80.83	-34.39	6.00	3	Horizontal	155	1.05	-	40.44	29.51	5.91	29.42
PK	4.34068G	44.17	80.83	-36.66	7.19	3	Horizontal	215	1.09	-	36.98	30.28	6.24	29.33

3.4 Operation Restriction

3.4.1 Operation Restriction Limit

Operation Restriction Limit	
<input checked="" type="checkbox"/>	Manually operated: manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 sec of being released.
<input type="checkbox"/>	Activated automatically: transmitter activated automatically shall cease transmission within 5 sec after activation.
<input type="checkbox"/>	Periodic transmissions: permitted with total transmission time of 2 sec per hour or less.
<input type="checkbox"/>	Periodic transmissions (lower field strength): each transmission is not greater than 1 sec and the silent period between transmissions is at least 30 times the duration of the transmission but in no case less than 10 sec.

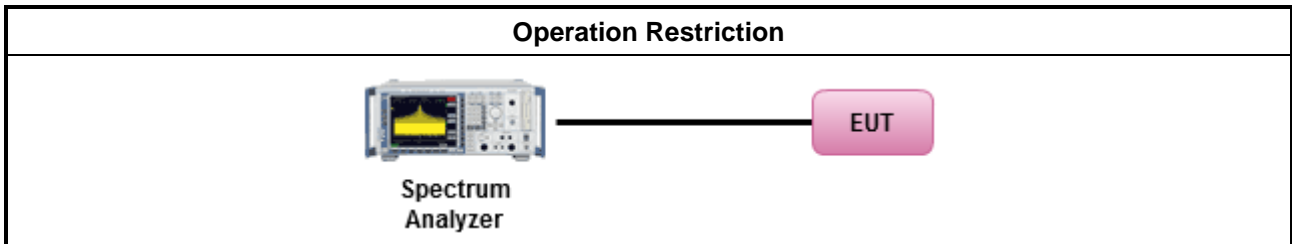
3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as ANSI C63.10, clause 7.4 for periodic operation measurement.

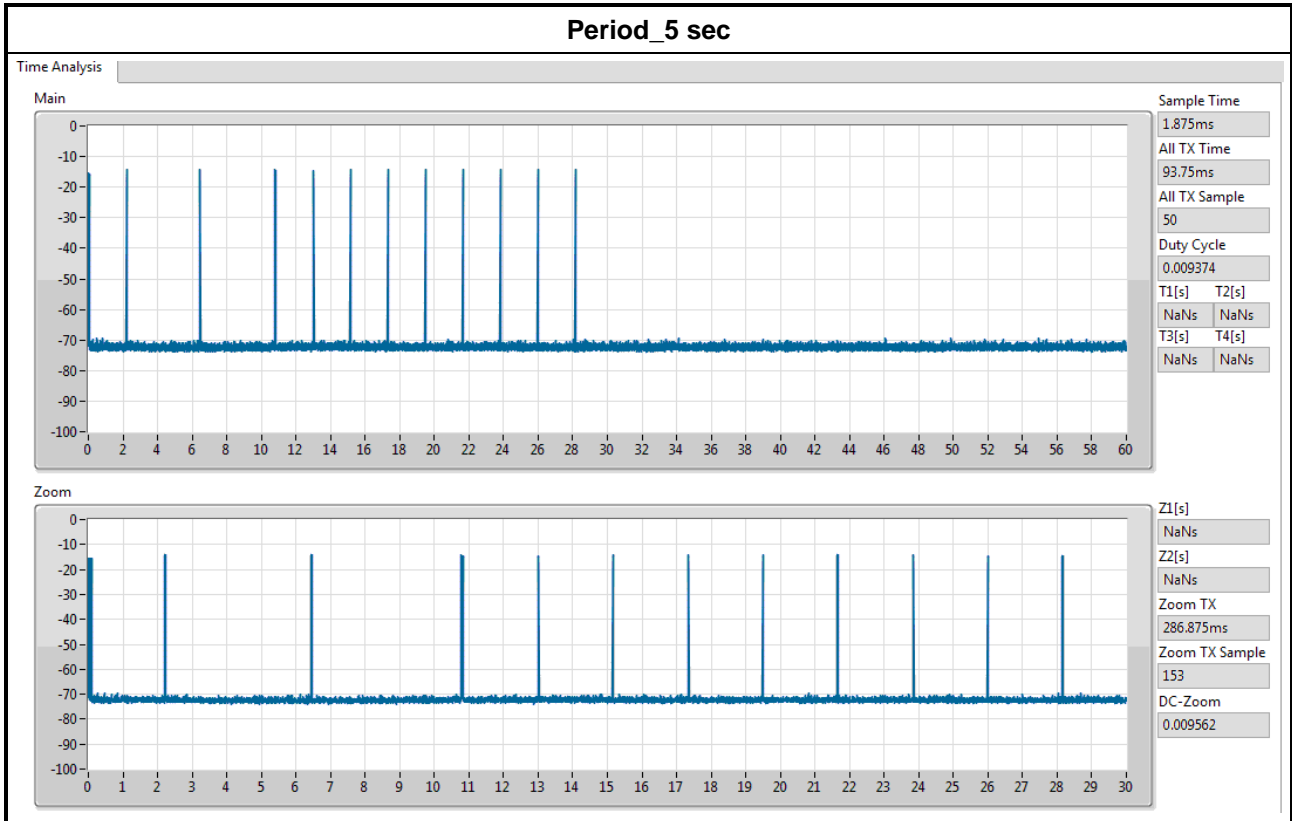
3.4.4 Test Setup





3.4.5 Test Result of Operation Restriction

Operation Condition	Pulse Duration (s)	Limits (s)
Transmission time (TX-on)	0.287	5.00





4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101013	10Hz~40GHz	19/Mar/2020	18/Mar/2021

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	06/Aug/2020	05/Aug/2021
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	04/Aug/2020	03/Aug/2021
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	19/Aug/2020	18/Aug/2021
Amplifier	HP	8447D	2944A08033	10kHz~1.3GHz	14/Apr/2020	13/Apr/2021
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz~26.5GHz	06/Oct/2020	05/Oct/2021
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz~1GHz	06/Sep/2020	05/Sep/2021
Double Ridged Guide Horn Antenna	SCHWARZBEC K	BBHA 9120 D	BBHA 9120 D 1531	1GHz~18GHz	26/Mar/2020	25/Mar/2021
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	19/Jun/2020	18/Jun/2021
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	18/Mar/2020	17/Mar/2021
RF CABLE 5+6m	HUBER+SUHNER	SUOFLEX 104	SN MY38596/4+SN 804300/4	1GHz~40GHz	04/Aug/2020	03/Aug/2021
Loop Antenna	Teseq	HLA 6120	24155	9kHz~30MHz	13/Apr/2020	12/Apr/2021
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	29/May/2020	28/May/2021