TEST REPORT

Application No.:	KSCR2606001471AT
FCC ID:	2BTH7-800
Applicant:	Shanghai Craftmeter Control Technology Co.,Ltd.
Address of Applicant:	No.102, Building 29, Lane 188, Maoting Road, Songjiang District, Shanghai, China
Manufacturer:	Shanghai Craftmeter Control Technology Co.,Ltd.
Address of Manufacturer:	No.102, Building 29, Lane 188, Maoting Road, Songjiang District, Shanghai, China
Factory:	Shanghai Craftmeter Control Technology Co.,Ltd.
Address of Factory:	No.102, Building 29, Lane 188, Maoting Road, Songjiang District, Shanghai, China
Equipment Under Test (EUT):	
EUT Name:	Industrial Remote Control
Model No.:	Refer to page 2 ♣
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	TECHWELL
Standard(s) :	47 CFR Part 15, Subpart C 15.231
Date of Receipt:	2026-06-16
Date of Test:	2026-07-13 to 2026-07-14
Date of Issue:	2026-07-15
Test Result:	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

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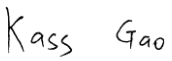
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Model No:

BM800,BM800-XXXXXXXX (where X may be any alphanumeric character, "-" or blank, representing customer-specific project codes used for marketing and identification purposes. Different project codes may correspond to remote control transmitters with different switch configurations, panel layouts, and panel markings. The internal circuitry and safety-related construction remain unchanged. Therefore, these differences do not affect safety-critical components or compliance with applicable safety requirements.)

BS800,BS800-XXXXXXXX (where X may be any alphanumeric character, "-" or blank, representing customer-specific project codes used for marketing and identification purposes. Different project codes may correspond to remote control transmitters with different switch configurations, panel layouts, and panel markings. The internal circuitry and safety-related construction remain unchanged. Therefore, these differences do not affect safety-critical components or compliance with applicable safety requirements.)

Revision Record			
Version	**Description**	***Date***	***Remark***
00	Original	2026-07-15	/

Authorized for issue by:				
Prepared By				
		Kass_Gao/Project Engineer		
Approved By				
		Terry Hou /Reviewer		

2 Test Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart C 15.231	N/A	47 CFR Part 15, Subpart C 15.203	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Field Strength of the Fundamental Signal (15.231(b))	47 CFR Part 15, Subpart C 15.231	ANSI C63.10-2020+Cor.1-2023 Section 6.5	47 CFR Part 15, Subpart C 15.231(b)	Pass
Radiated Emissions below 1GHz		ANSI C63.10-2020+Cor.1-2023 Section 6.4&6.5	47 CFR Part 15C Section 15.231(b) and 15.209	Pass
Radiated Emissions above 1GHz		ANSI C63.10-2020+Cor.1-2023 Section 6.6	47 CFR Part 15C Section 15.231(b) and 15.209	Pass
20dB Bandwidth		ANSI C63.10-2020+Cor.1-2023 Section 6.9.2	47 CFR Part 15, Subpart C 15.231(c)	Pass
Dwell Time (15.231(a1))		ANSI C63.10-2020+Cor.1-2023 Section 7.4	47 CFR Part 15, Subpart C 15.231(a1)	Pass

Declaration of EUT Family Grouping:

Note1: BM800, BM800-XXXXXXXX & BS800, BS800-XXXXXXXX are transmitter, the difference between the two transmitters is that the BM800 series has an additional number of joysticks and can be equipped with a lithium battery in parallel, additionally, the appearance of the screen is also different, all other parts are the same.

Note2: The difference between BM800 and BM800-XXXXXXXX is only in the model name, where X may be any alphanumeric character, "-" or blank, representing customer-specific project codes used for marketing and identification purposes. Different project codes may correspond to remote control transmitters with different switch configurations, panel layouts, and panel markings. The internal circuitry and safety-related construction remain unchanged. Therefore, these differences do not affect safety-critical components or compliance with applicable safety requirements.

Note3: The difference between BS800 and BS800-XXXXXXXX is only in the model name, where X may be any alphanumeric character, "-" or blank, representing customer-specific project codes used for marketing and identification purposes. Different project codes may correspond to remote control transmitters with different switch configurations, panel layouts, and panel markings. The internal circuitry and safety-related construction remain unchanged. Therefore, these differences do not affect safety-critical components or compliance with applicable safety requirements.

Note4: Only BM800, BS800 were tested all items.

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 7.4V by Polymer Lithium Battery Battery information: Model: BL2S-P Rated Voltage: DC 7.4V Rated Capacity: 3600mAh Rated Power: 26.64Wh
Operating Frequency:	433.15MHz-434.65MHz:
Transmitter Operation Type:	☐ Periodic Transmitter ☒ Manually Operated Transmitter
Channel Numbers:	3
Modulation Type:	GFSK
Antenna Type:	Helical Antenna
Antenna Gain:	1.00 dBi (Provided by the manufacturer)
Channel Spacing:	750kHz

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--
The EUT has been tested as an independent unit.			

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Conducted Power	0.6dB
6	RF Power Density	2.9dB
7	Conducted Spurious Emissions	0.75dB
8	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
10	Temperature Test	1°C
11	Humidity Test	3%
12	Supply Voltages	1.5%
13	Time	3%
Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

4.4 Test Location

All tests were performed at:
Compliance Certification Services (Kunshan) Inc.
No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.
Tel: +86 512 5735 5888 Fax: +86 512 5737 0818
No tests were sub-contracted.
Note:
1. SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).
3. Sample source: sent by customer.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 2541.01)

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA).

• FCC (Designation Number: CN1172)

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory.

• ISED (CAB Identifier: CN0072)

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 2324E

• VCCI (Member No:1938)

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emission at Mains Terminals						
1	EMI Test Receive	R&S	ESCI	KS301196	07/06/2026	07/05/2027
2	LISN	R&S	ENV216	KS301197	01/08/2026	01/07/2027
3	LISN	Schwarzbeck	NNLK 8129	KS301091	01/08/2026	01/07/2027
4	Pulse Limiter	R&S	ESH3-Z2	KUS1902E001	12/18/2025	12/17/2026
5	CE test Cable	Thermax	/	CZ301102	12/18/2025	12/17/2026
6	Software	Faratronic	E3	/	N.C.R	N.C.R
RF Conducted Test						
1	Spectrum Analyzer	Keysight	N9020A	KUS1911E004-2	07/07/2026	07/06/2027
2	Spectrum Analyzer	Keysight	N9020A	KUS2001M001-2	07/07/2026	07/06/2027
3	Spectrum Analyzer	Keysight	N9030B	KSEM021-1	12/17/2025	12/16/2026
4	Signal Generator	R&S	SMBV100B	KSEM032	12/17/2025	12/16/2026
5	Signal Generator	R&S	SMW200A	KSEM020-1	07/07/2026	07/06/2027
6	Signal Generator	Agilent	N5182A	KUS2001M001-1	07/07/2026	07/06/2027
7	Signal Generator	Agilent	E8257C	KS301066	07/07/2026	07/06/2027
8	Radio Communication Test Station	Anritsu	MT8000A	KSEM001-1	07/07/2026	07/06/2027
9	Radio Communication Analyzer	Anritsu	MT8821C	KSEM002-1	12/17/2025	12/16/2026
10	Universal Radio Communication Tester	R&S	CMW500	KUS1911E004-1	07/07/2026	07/06/2027
11	Switcher	TST	FY562	KUS2001M001-4	12/17/2025	12/16/2026
12	Conducted Test Cable	Thermax	RF01-RF04	CZ301111-CZ301120	12/17/2025	12/16/2026
13	Temp. / Humidity Chamber	TERCHY	MHK-120AK	KS301190	07/07/2026	07/06/2027
14	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-5	12/30/2025	12/29/2026
15	Software	BST	TST-PASS	/	NCR	NCR
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	07/06/2026	07/05/2027
2	Universal Radio Communication Tester	R&S	CMW500	KSEM009-1	12/17/2025	12/16/2026
3	Signal Generator	Agilent	E8257C	KS301066	07/07/2026	07/06/2027
4	Loop Antenna（9KHz-30MHz）	COM-POWER	AL-130R	KUS1806E001	07/07/2026	07/06/2027
5	Bilog Antenna（30MHz-1GHz）	TESEQ	CBL 6112D	KUS1806E005	07/07/2026	07/06/2027
6	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	01/11/2026	01/10/2028
7	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	01/11/2026	01/10/2028
8	Amplifier(30MHz~1GHz)	TST	LNA009100G30	KSEM061	12/18/2025	12/17/2026
9	Amplifier(400MHz~8GHz)	TST	LNA004080G30	KSEM062	12/18/2025	12/17/2026
10	Amplifier(1GHz~18GHz)	TST	LNA010180G45	KSEM039	07/07/2026	07/06/2027
11	Amplifier(18~40GHz)	TST	LNA180400G40	KSEM038	07/07/2026	07/06/2027
12	Radiation Test Cable	REBES MICROWAVE	A81-SMSM-10M	CZ301097-CZ301100	11/14/2025	11/13/2026
13	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	12/30/2025	12/29/2026
14	Software	ESE	E3_V 6.111221a	/	NCR	NCR
15	Measurement Software	Tonscend	JS32-RE V5.0.0.1	/	NCR	NCR
16	Measurement Software	Tonscend	JS32-RSE V5.0.0.0	/	NCR	NCR

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

15.203 requirement:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is PCB Antenna and no consideration of replacement.

Antenna location: Refer to Internal photos

7 Radio Spectrum Matter Test Results

7.1 Field Strength of the Fundamental Signal (15.231(b))

Test Requirement 47 CFR Part 15, Subpart C 15.231(b)

Test Method: ANSI C63.10-2020+Cor.1-2023 Section 6.5

Limit:

Fundamental frequency(MHz)	Field strength of fundamental(microvolts/meter)	Field strength of spurious emissions(microvolts/meter)
40.66-40.70	2250	225
70-130	1250	125
130-174	1250 to 3750	125 to 375
174-260	3750	375
260-470	3750 to 12500	375 to 1250
Above 470	12500	1250
Remark: the emission limit is based on measurement instrumentation employing an average detector at a distance of 3 meters. The frequencies above 1000MHz are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

7.1.1 E.U.T. Operation

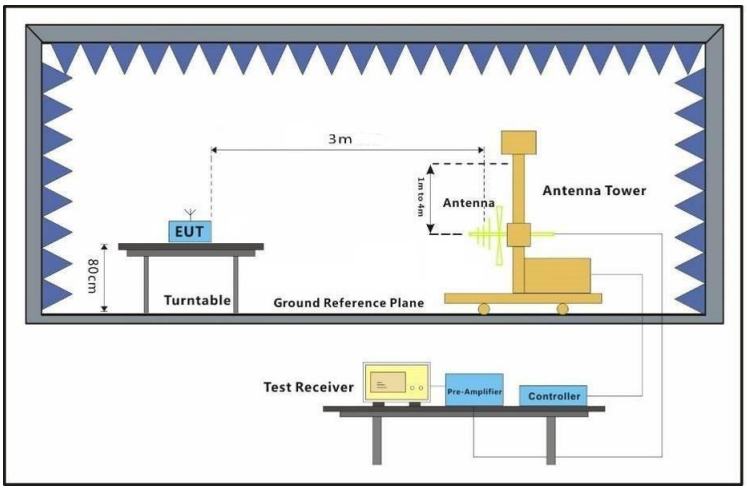
Operating Environment:

Temperature: 23.5 °C Humidity: 45.6 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting mode.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Please Refer to Appendix for Details

7.2 Radiated Emissions below 1GHz

Test Requirement 47 CFR Part 15C Section 15.231(b) and 15.209

Test Method: ANSI C63.10-2020+Cor.1-2023 Section 6.4&6.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

7.2.1 E.U.T. Operation

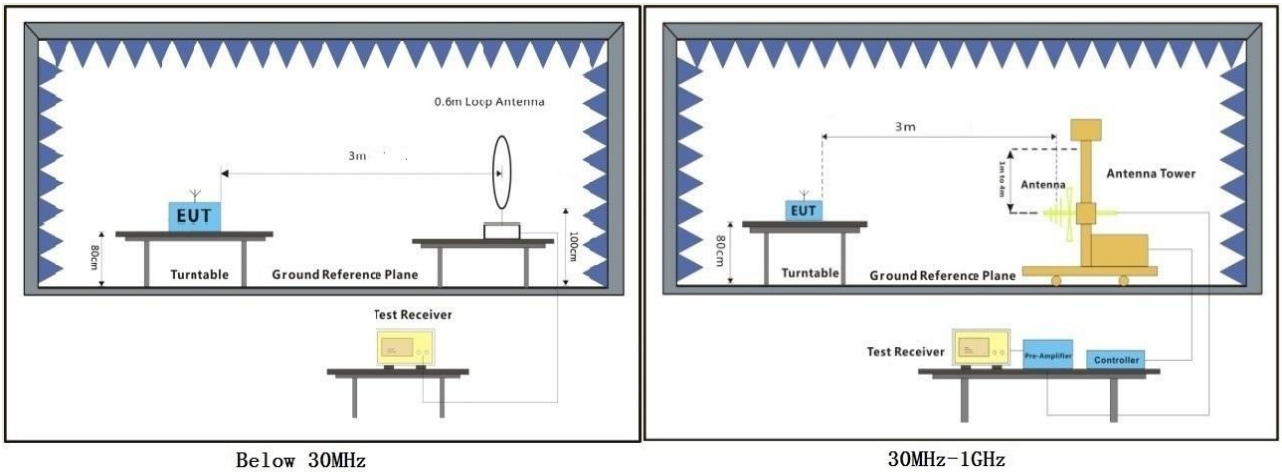
Operating Environment:

Temperature: 23.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting mode.

7.2.3 Test Setup Diagram



Below 30MHz 30MHz-1GHz

7.2.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Remark 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Please Refer to Appendix for Details

7.3 Radiated Emissions above 1GHz

Test Requirement 47 CFR Part 15C Section 15.231(b) and 15.209

Test Method: ANSI C63.10-2020+Cor.1-2023 Section 6.6

Limit:

For Restricted bands

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

For Other bands

Fundamental Frequency MHz	Field Strength of Fundamental (dBμV/m @ 3 m)	Field Strength of Hasrmonics and Spurious Emissions (dBμV/m @ 3 m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	**61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	**71.48 to 81.94	51.48 to 61.94
Above 470	81.94	61.94
Detector:	Peak for pre-scan	
	QP for 30MHz to1000 MHz:120 kHz resolution bandwidth Peak for Above 1 GHz: 1 MHz resolution bandwidth	

** linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows:

for the band 130-174 MHz, uV/m at 3 meters = 56.81818(F) - 6136.3636;

for the band 260-470 MHz, uV/m at 3 meters = 41.6667(F) - 7083.3333.

The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

The fundamental frequency of the EUT is 433.15 MHz & 434.65 MHz.

433.15MHz: The limit for average or QP field strength dBuv/m for the fundamental emission= 80.80 dBμV/m.

No fundamental is allowed in the restricted bands.

The limit for average field strength dBuv/m for the spurious emission=60.80 dBuV/m. Spurious in the restricted bands must be less than 60.80 dBuV/m or 15.209, whichever limit permits a higher field strength.

434.65MHz: The limit for average or QP field strength dBuv/m for the fundamental emission= 80.85 dBμV/m.

No fundamental is allowed in the restricted bands.

The limit for average field strength dBuv/m for the spurious emission=60.85 dBuV/m. Spurious in the restricted bands must be less than 60.85 dBuV/m or 15.209, whichever limit permits a higher field strength.

7.3.1 E.U.T. Operation

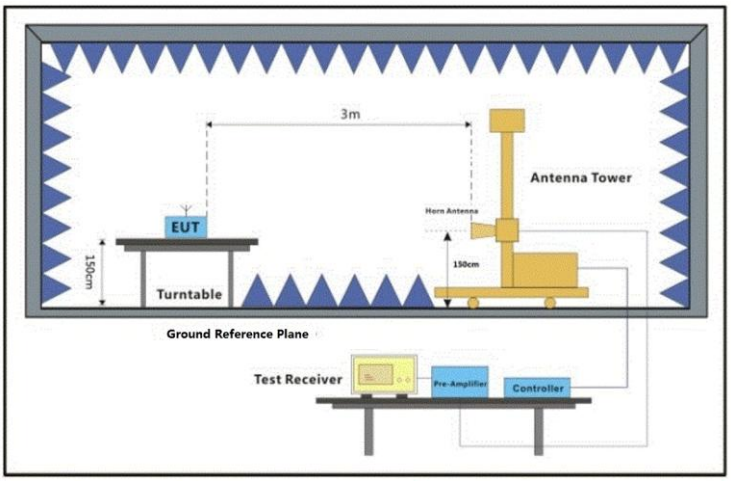
Operating Environment:

Temperature: 23.5 °C Humidity: 45.6 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting mode.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

2) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Please Refer to Appendix for Details

7.4 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.231(c)
Test Method: ANSI C63.10-2020+Cor.1-2023 Section 6.9.2

Limit:

Frequency range(MHz)	Limit
70-900	No wider than 0.25% of the center frequency
Above 900	No wider than 0.5% of the center frequency

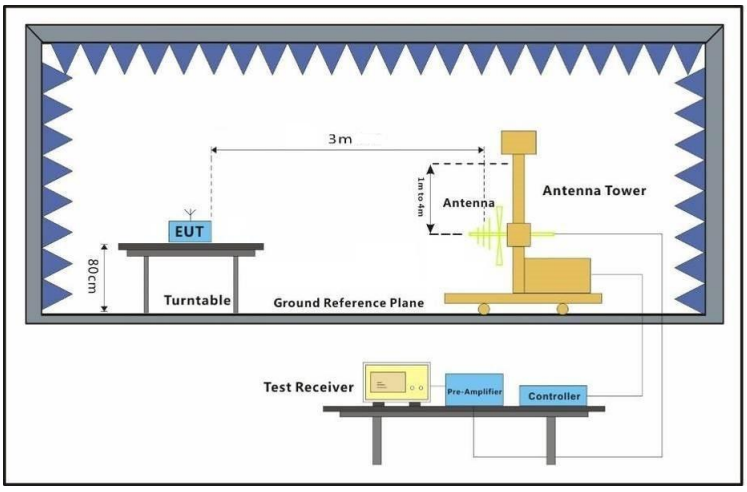
7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 45.6 % RH Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting mode.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Please Refer to Appendix for Details

7.5 Dwell Time (15.231(a1))

Test Requirement 47 CFR Part 15, Subpart C 15.231(a1)

Test Method: ANSI C63.10-2020+Cor.1-2023 Section 7.4

Limit:

Device type	Limit
Manually operated transmitter	The switch automatically deactivate the transmitter within not more than 5 seconds of being released

7.5.1 E.U.T. Operation

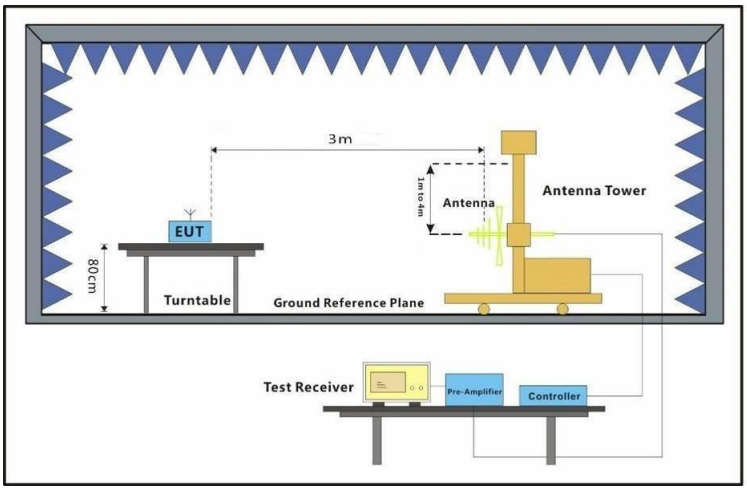
Operating Environment:

Temperature: 23.5 °C Humidity: 45.6 % RH Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting mode.

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2606001471AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix_Photographs of EUT Constructional Details for KSCR2606001471AT

10 Appendix

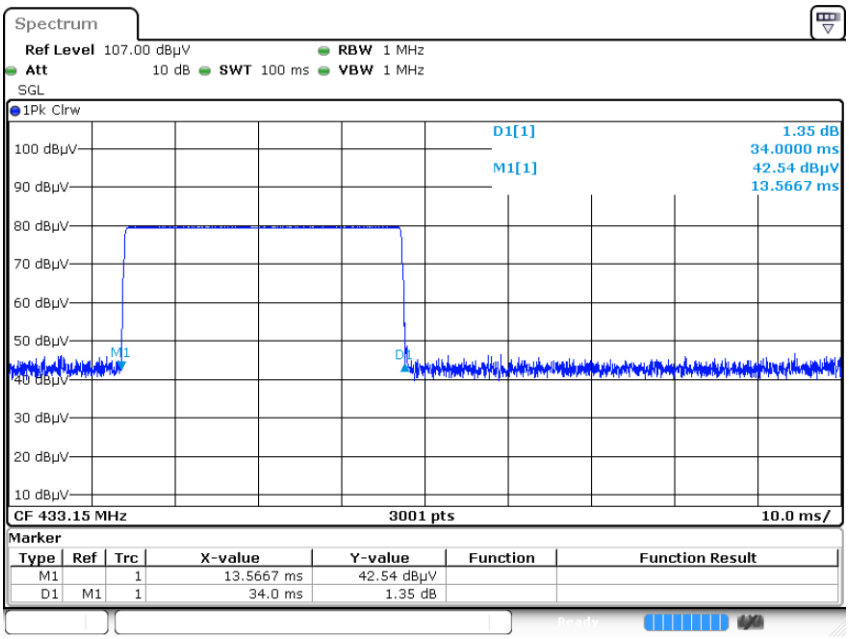
BM800

10.1 Spurious Emissions

10.1.1 Field Strength of the Fundamental Signal

Test channel	Freq. (MHz)	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
Channel 1	433.15	82.67	100.80	-18.13	Peak	Vertical
		79.51	100.80	-21.29	Peak	Horizontal
		73.30	80.80	-7.50	AVG	Vertical
		70.14	80.80	-10.66	AVG	Horizontal
Channel 3	434.65	82.74	100.85	-18.11	Peak	Vertical
		78.43	100.85	-22.42	Peak	Horizontal
		73.37	80.85	-7.48	AVG	Vertical
		69.06	80.85	-11.79	AVG	Horizontal

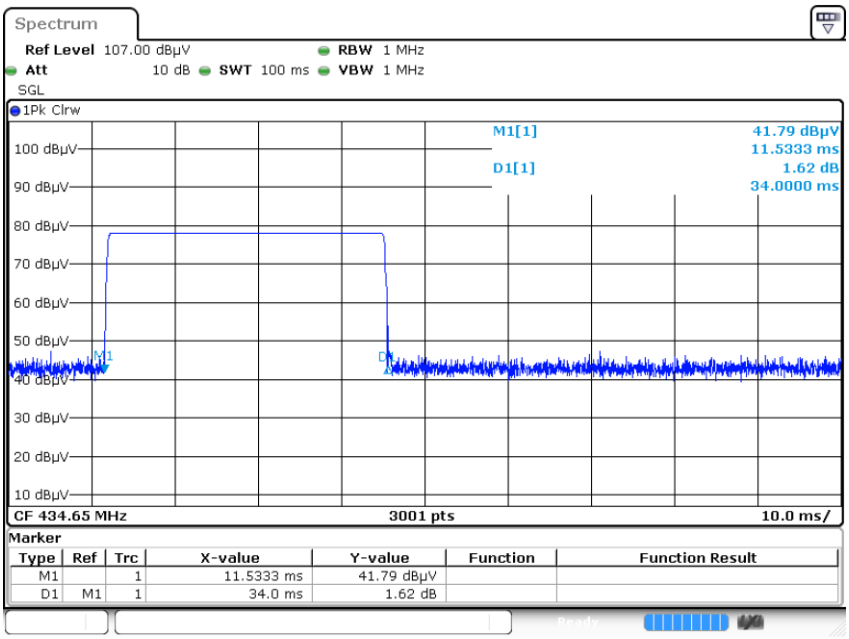
Channel 1



Remark:

1. If the Peak value below the AV Limit, the AV test doesn't perform for this submission.
2. Average level = Peak level - Duty Cycle Factor.
3. Duty Cycle Factor = 20*log (Duty Cycle) = -9.37dB.

Channel 3



Remark:

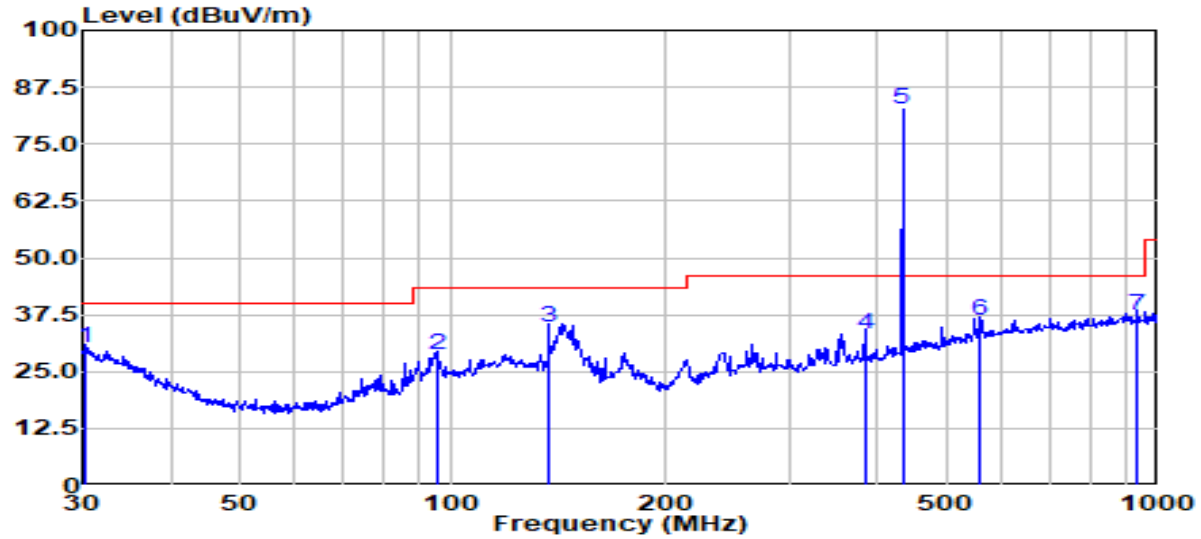
1. If the Peak value below the AV Limit, the AV test doesn't perform for this submission.
2. Average level = Peak level - Duty Cycle Factor
3. Duty Cycle Factor = 20*log (Duty Cycle) = -9.37dB

10.2 Spurious Emissions

Below 1GHz:

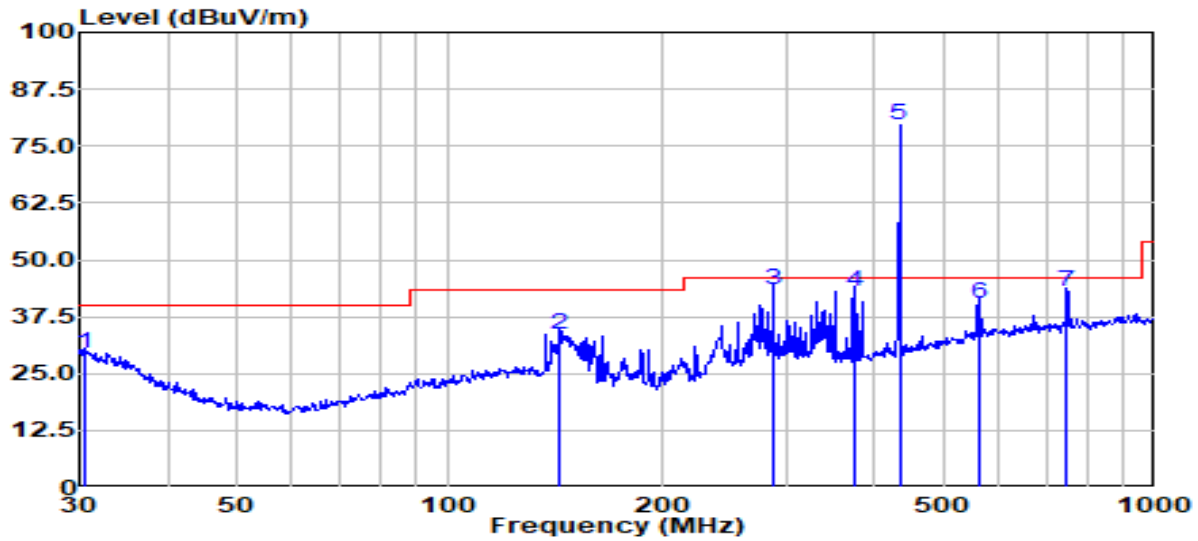
433.15 MHz:

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.317	5.16	24.87	30.03	40.00	-9.97	QP
2	95.093	10.26	18.29	28.55	43.50	-14.95	QP
3	136.939	14.32	20.27	34.59	43.50	-8.91	QP
4	383.932	10.28	23.01	33.29	46.00	-12.71	QP
5	434.065	58.15	24.52	82.67	Fundamental frequency		peak
6	560.693	7.92	28.20	36.12	46.00	-9.88	QP
7	935.546	5.87	31.45	37.32	46.00	-8.68	QP

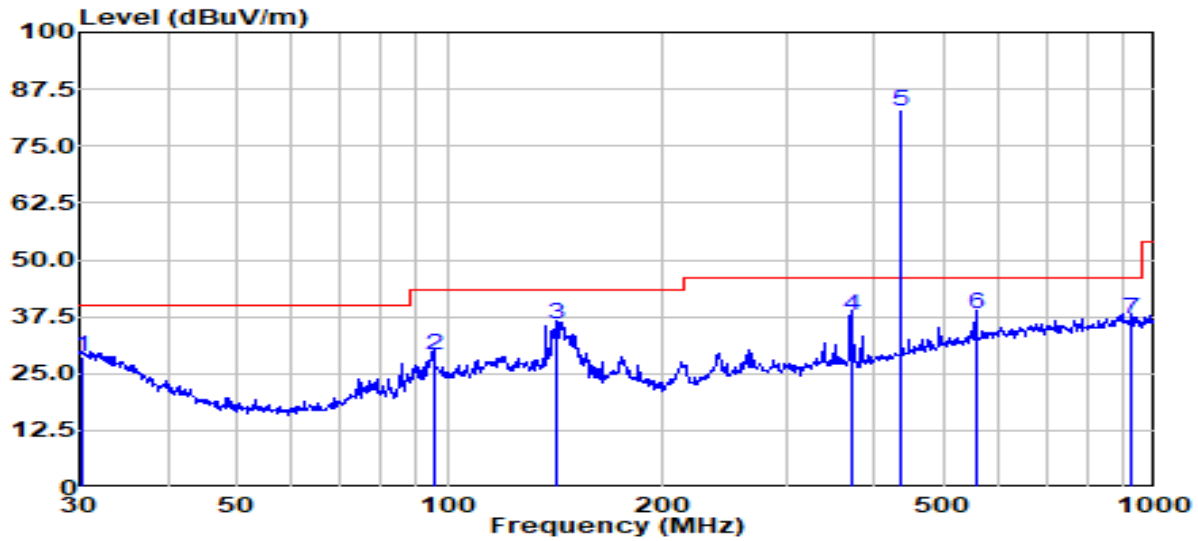
Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.424	4.80	24.78	29.58	40.00	-10.42	QP
2	143.326	14.28	19.34	33.62	43.50	-9.88	QP
3	287.990	21.98	21.39	43.37	46.00	-2.63	QP
4	375.939	20.49	22.69	43.18	46.00	-2.82	QP
5	434.065	54.99	24.52	79.51	Fundamental frequency		Peak
6	564.639	12.37	28.08	40.45	46.00	-5.55	QP
7	750.108	12.86	30.09	42.95	46.00	-3.05	QP

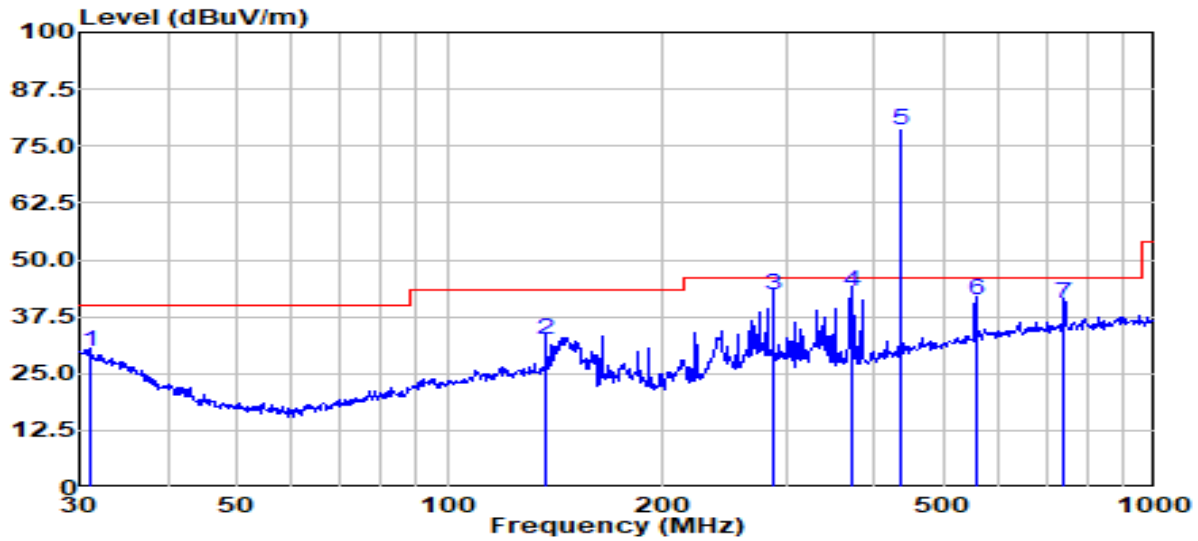
434.65 MHz:

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.211	3.76	24.95	28.71	40.00	-11.29	QP
2	95.093	10.95	18.29	29.24	43.50	-14.26	QP
3	141.826	16.22	19.57	35.79	43.50	-7.71	QP
4	370.702	15.15	22.74	37.89	46.00	-8.11	QP
5	435.590	58.22	24.52	82.74	Fundamental frequency		peak
6	556.774	10.04	27.92	37.96	46.00	-8.04	QP
7	925.756	5.87	31.23	37.10	46.00	-8.90	QP

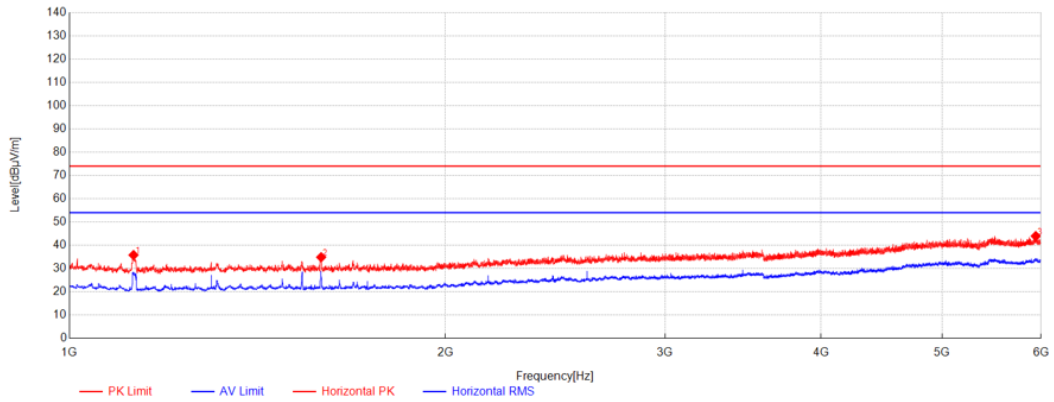
Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.962	5.33	24.36	29.69	40.00	-10.31	QP
2	136.939	12.32	20.27	32.59	43.50	-10.91	QP
3	287.990	21.00	21.39	42.39	46.00	-3.61	QP
4	373.311	20.57	22.62	43.19	46.00	-2.81	QP
5	435.590	53.91	24.52	78.43	Fundamental frequency		Peak
6	556.774	13.06	27.92	40.98	46.00	-5.02	QP
7	742.259	10.69	29.81	40.50	46.00	-5.50	QP

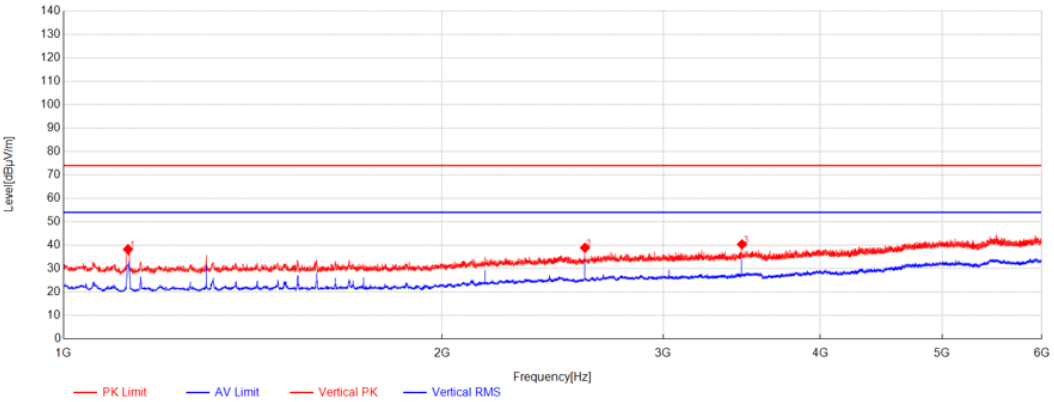
Above 1GHz

433.15MHz:



Data List

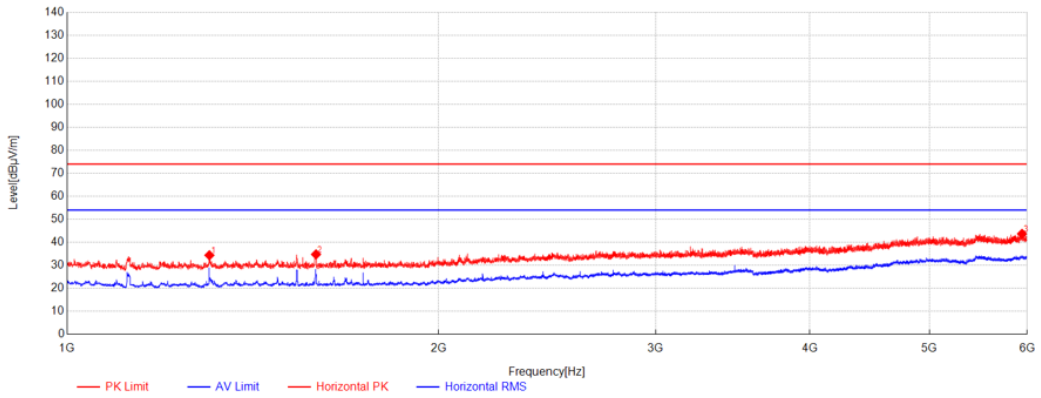
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1125.4167	67.56	23.20	-54.98	35.78	74.00	38.22	Horizontal
2	1590.8333	65.94	23.79	-54.88	34.85	74.00	39.15	Horizontal
3	5942.0833	58.90	32.84	-47.83	43.91	74.00	30.09	Horizontal



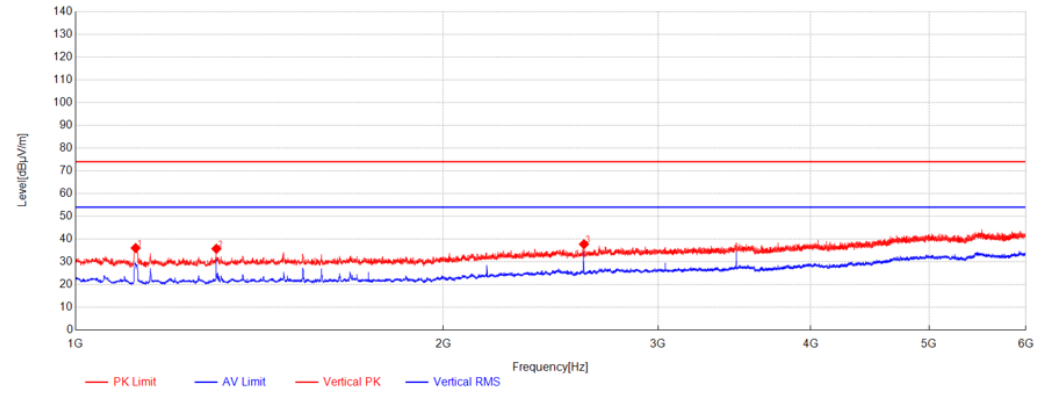
Data List

NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1125.4167	70.03	23.20	-54.98	38.25	74.00	35.75	Vertical
2	2598.75	65.58	27.08	-53.78	38.88	74.00	35.12	Vertical
3	3465	63.82	28.40	-51.88	40.34	74.00	33.66	Vertical

434.65MHz:



Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1304.1667	65.66	23.84	-55.14	34.36	74.00	39.64	Horizontal
2	1591.25	65.83	23.79	-54.88	34.74	74.00	39.26	Horizontal
3	5942.5	58.65	32.84	-47.83	43.66	74.00	30.34	Horizontal



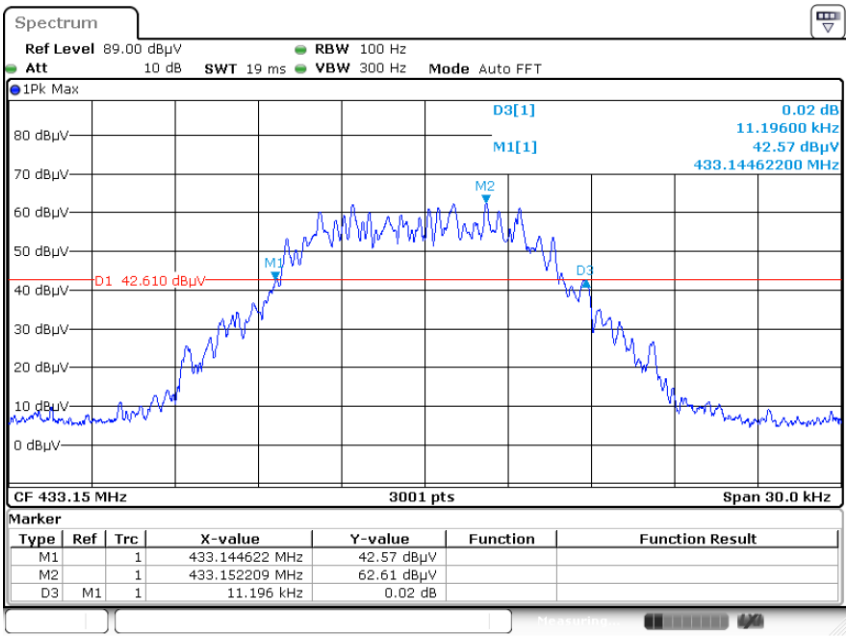
Data List								
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1120	67.86	23.20	-54.99	36.07	74.00	37.93	Vertical
2	1304.1667	67.02	23.84	-55.14	35.72	74.00	38.28	Vertical
3	2607.9167	64.35	27.10	-53.72	37.73	74.00	36.27	Vertical

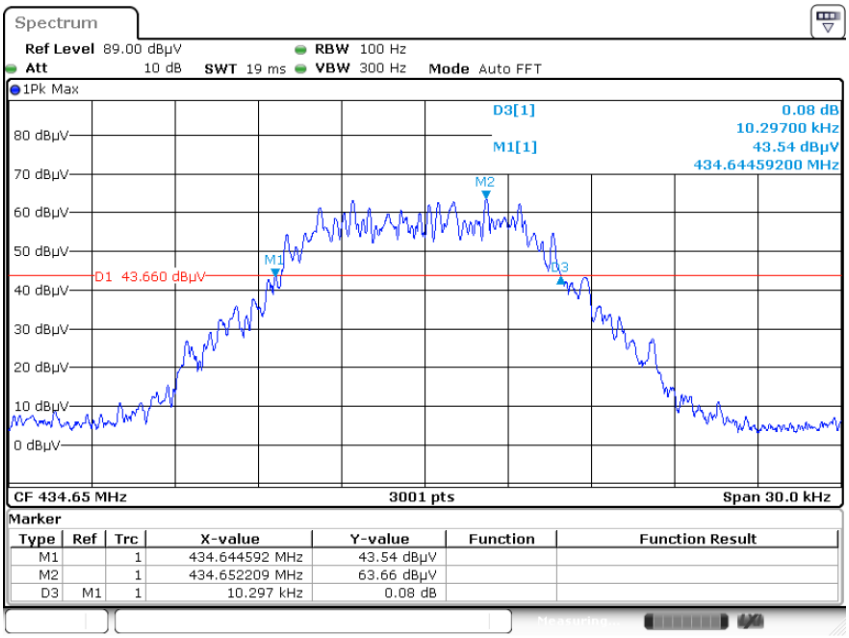
10.3 20dB Bandwidth

Measurement Data:

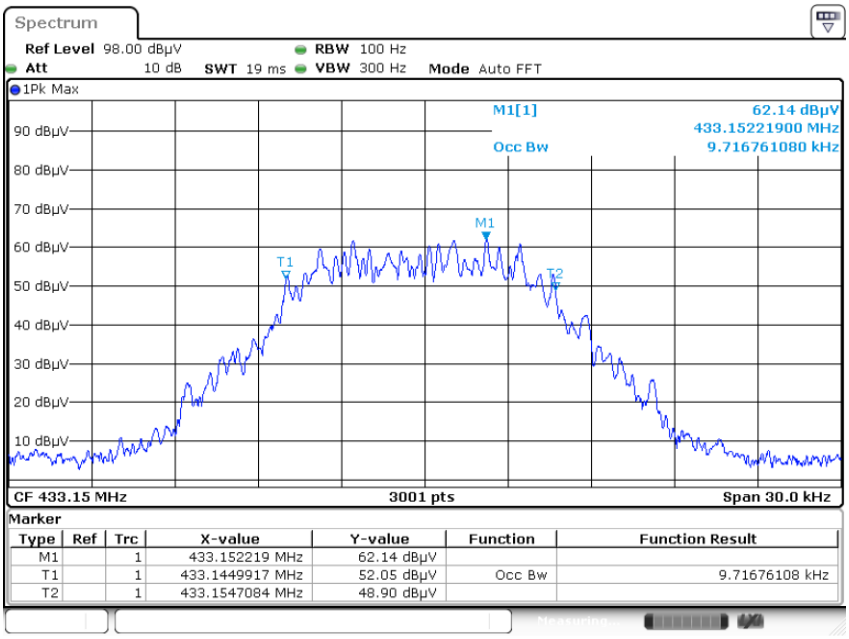
Frequency (MHz)	20dB bandwidth (kHz)	Limit (kHz)	Results
433.15	11.196	1084.8	Pass
434.65	10.297	1084.8	Pass

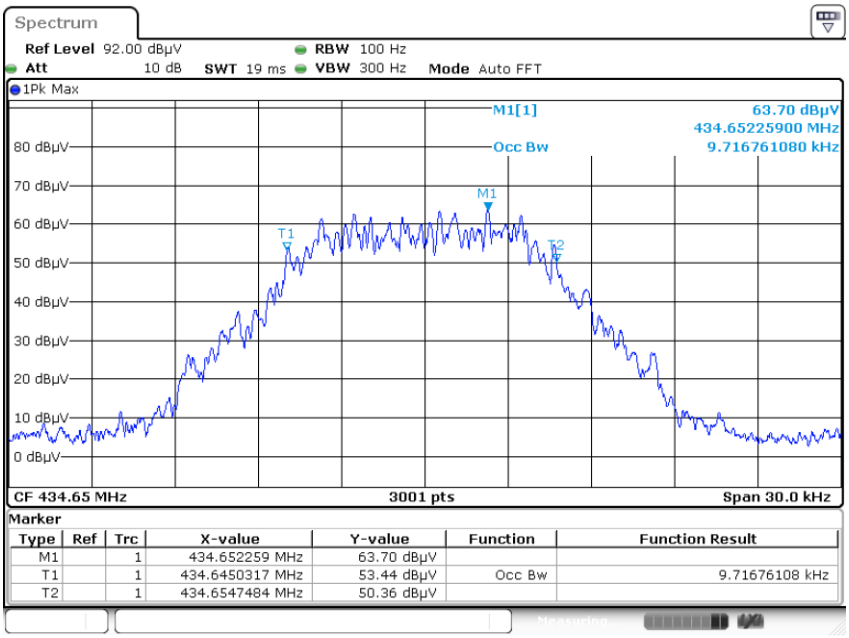
Test plot as follows:





10.4 99%OBW


Spectrum
Ref Level 98.00 dBµV
RBW 100 Hz
Att 10 dB
SWT 19 ms
VBW 300 Hz
Mode Auto FFT
1Pk Max
M1[1]
62.14 dBµV
433.15221900 MHz
Occ Bw
9.716761080 kHz
90 dBµV
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
M1
T1
T2
CF 433.15 MHz
3001 pts
Span 30.0 kHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 433.152219 MHz 62.14 dBµV
T1 1 433.1449917 MHz 52.05 dBµV Occ Bw 9.71676108 kHz
T2 1 433.1547084 MHz 48.90 dBµV


Spectrum
Ref Level 92.00 dBµV
RBW 100 Hz
Att 10 dB
SWT 19 ms
VBW 300 Hz
Mode Auto FFT
1Pk Max
M1[1]
63.70 dBµV
434.65225900 MHz
Occ Bw
9.716761080 kHz
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
10 dBµV
0 dBµV
M1
T1
T2
CF 434.65 MHz
3001 pts
Span 30.0 kHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 434.652259 MHz 63.70 dBµV
T1 1 434.6450317 MHz 53.44 dBµV Occ Bw 9.71676108 kHz
T2 1 434.6547484 MHz 50.36 dBµV

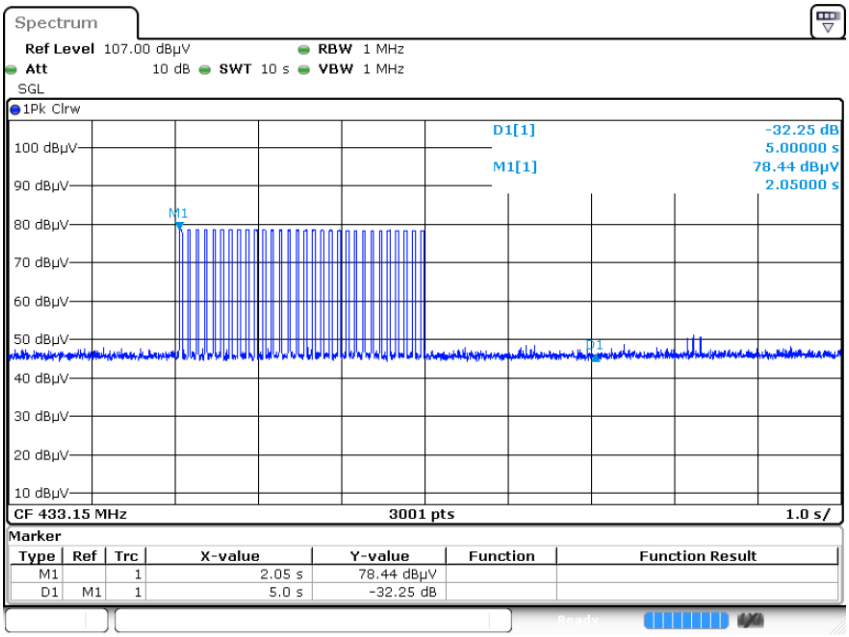
10.5 Dwell Time

Measurement Data:

433.15 MHz

Test item	Limit (s)	Results
Transmission Duration	⩽5s	Pass

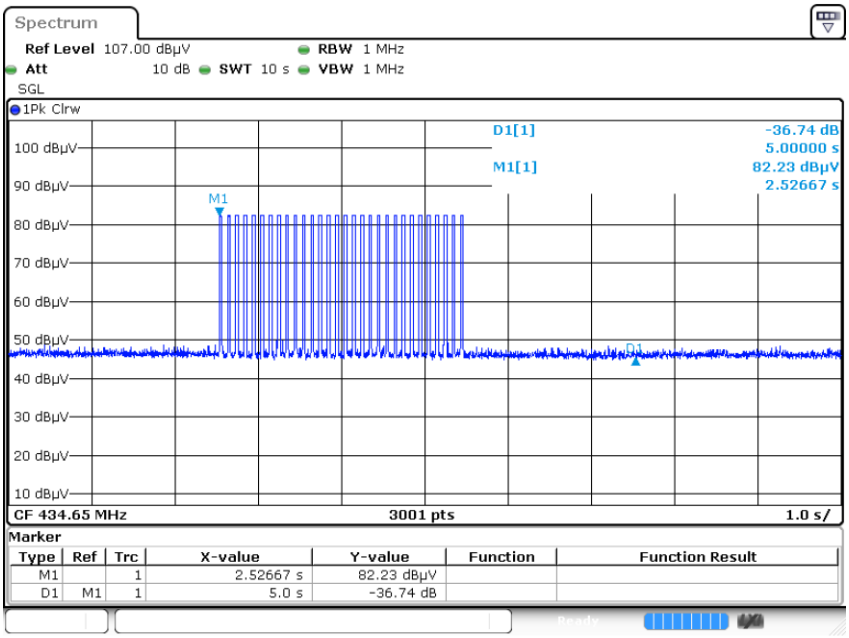
Test plot as follows:



434.65 MHz

Test item	Limit (s)	Results
Transmission Duration	⩽5s	Pass

Test plot as follows:



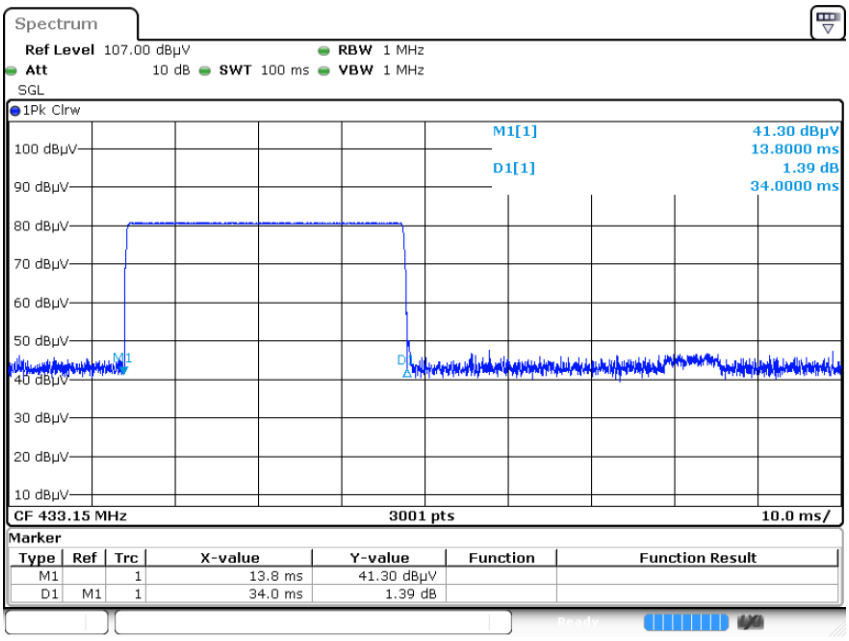
BS800

10.6 Spurious Emissions

10.6.1 Field Strength of the Fundamental Signal

Test channel	Freq. (MHz)	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
Channel 1	433.15	81.70	100.80	-19.1	Peak	Vertical
		79.57	100.80	-21.23	Peak	Horizontal
		72.33	80.80	-8.47	AVG	Vertical
		70.20	80.80	-10.60	AVG	Horizontal
Channel 3	434.65	81.89	100.85	-18.96	Peak	Vertical
		79.60	100.85	-21.25	Peak	Horizontal
		72.52	80.85	-8.33	AVG	Vertical
		70.23	80.85	-10.62	AVG	Horizontal

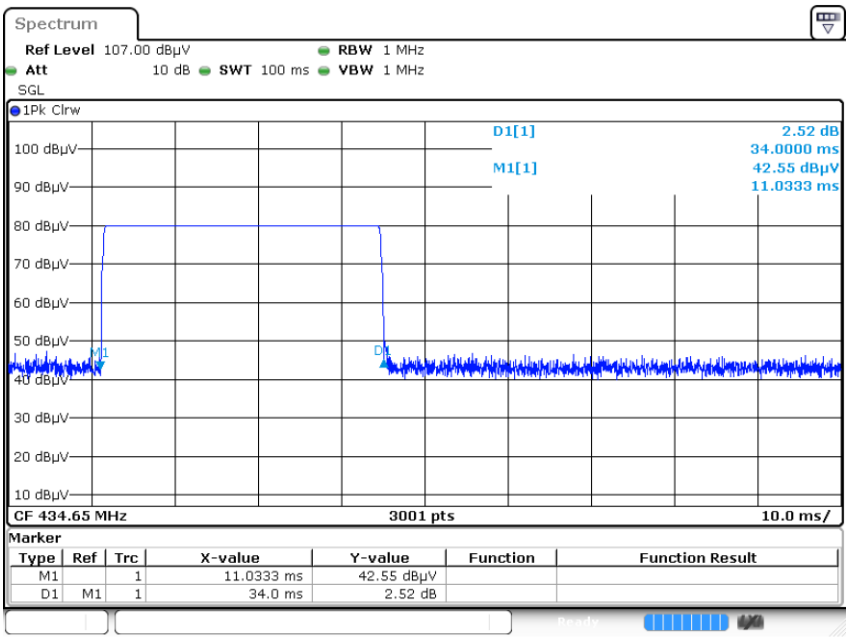
Channel 1



Remark:

1. If the Peak value below the AV Limit, the AV test doesn't perform for this submission.
2. Average level = Peak level - Duty Cycle Factor
3. Duty Cycle Factor = 20*log (Duty Cycle) = -9.37dB

Channel 3



Remark:

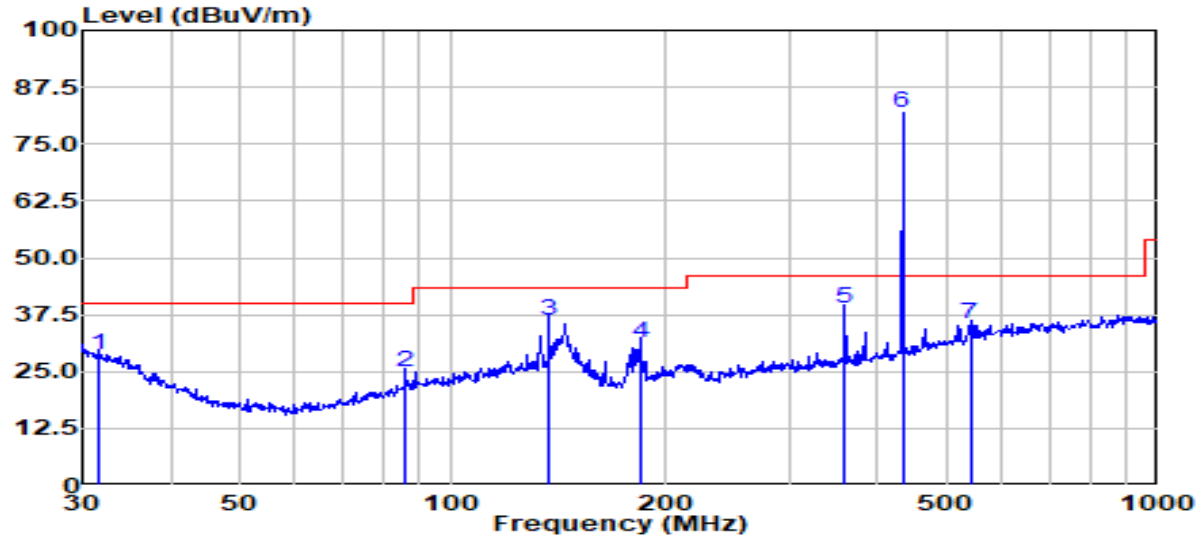
1. If the Peak value below the AV Limit, the AV test doesn't perform for this submission.
2. Average level = Peak level - Duty Cycle Factor
3. Duty Cycle Factor = 20*log (Duty Cycle) = -9.37dB

10.7 Spurious Emissions

Below 1GHz:

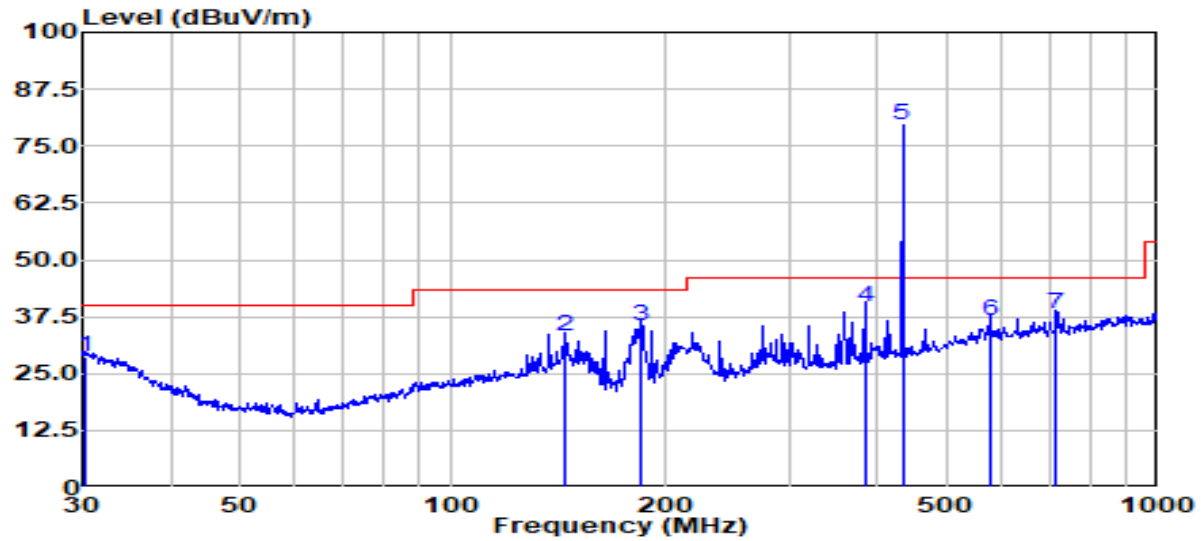
433.15 MHz:

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	31.510	4.94	23.82	28.76	40.00	-11.24	QP
2	85.898	8.80	15.97	24.77	40.00	-15.23	QP
3	136.939	15.97	20.27	36.24	43.50	-7.26	QP
4	184.490	13.53	17.86	31.39	43.50	-12.11	QP
5	360.448	16.15	22.59	38.74	46.00	-7.26	QP
6	434.065	57.18	24.52	81.70	Fundamental frequency		peak
7	541.373	7.80	27.55	35.35	46.00	-10.65	QP

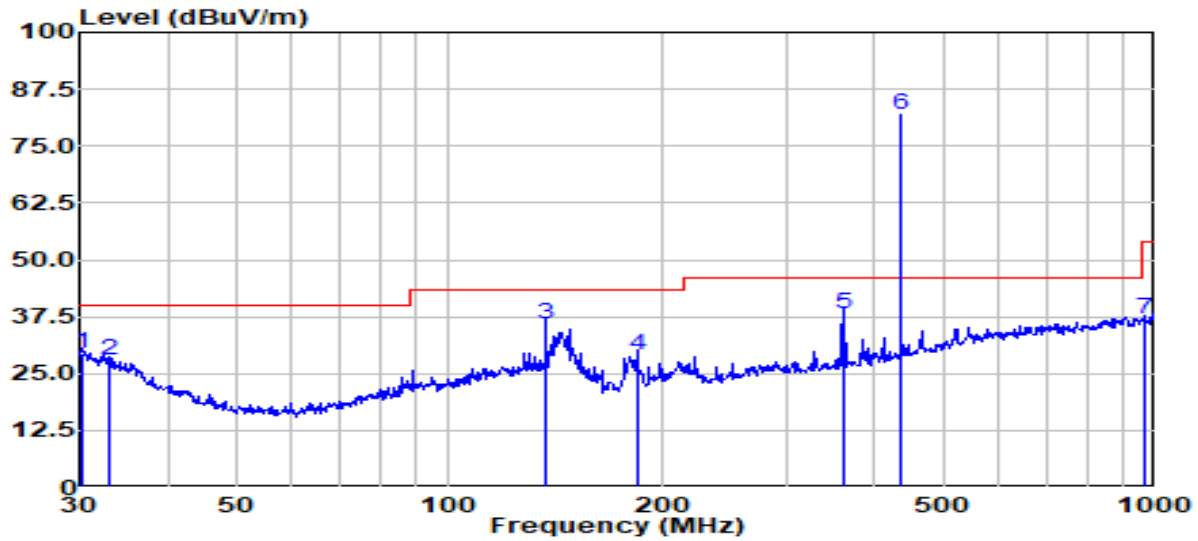
Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.317	3.97	24.87	28.84	40.00	-11.16	QP
2	144.335	13.98	19.05	33.03	43.50	-10.47	QP
3	185.138	17.61	17.84	35.45	43.50	-8.05	QP
4	383.932	16.70	23.01	39.71	46.00	-6.29	QP
5	434.065	55.05	24.52	79.57	Fundamental frequency		Peak
6	576.644	8.50	28.22	36.72	46.00	-9.28	QP
7	716.682	8.14	29.89	38.03	46.00	-7.97	QP

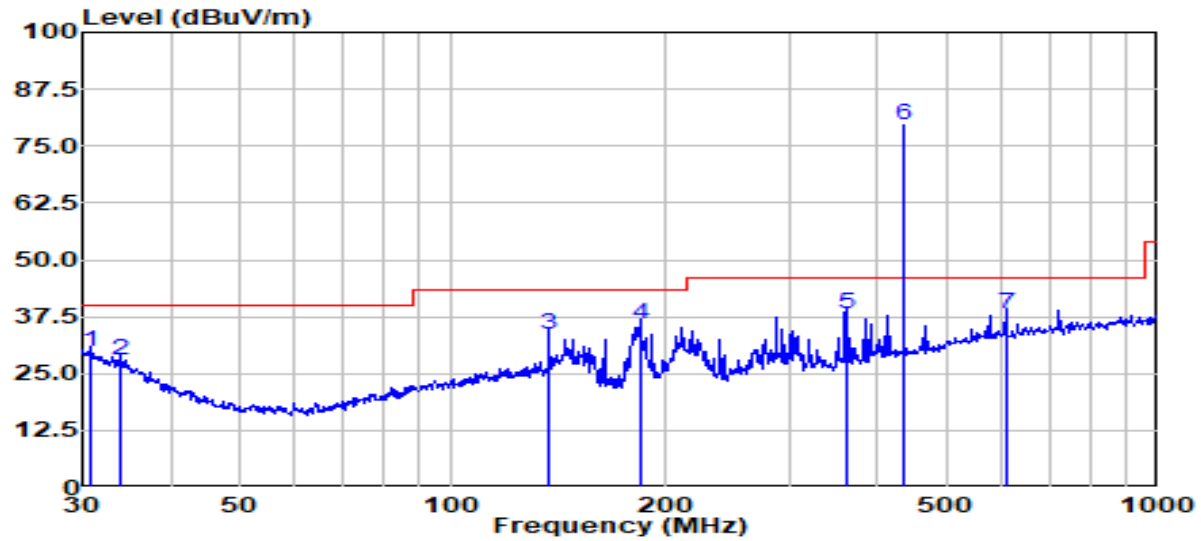
434.65 MHz:

Vertical:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.317	4.54	24.87	29.41	40.00	-10.59	QP
2	32.979	4.60	23.15	27.75	40.00	-12.25	QP
3	136.939	15.69	20.27	35.96	43.50	-7.54	QP
4	184.490	11.27	17.86	29.13	43.50	-14.37	QP
5	361.714	15.46	22.72	38.18	46.00	-7.82	QP
6	435.590	57.37	24.52	81.89	Fundamental frequency		peak
7	962.162	5.97	30.87	36.84	54.00	-17.16	QP

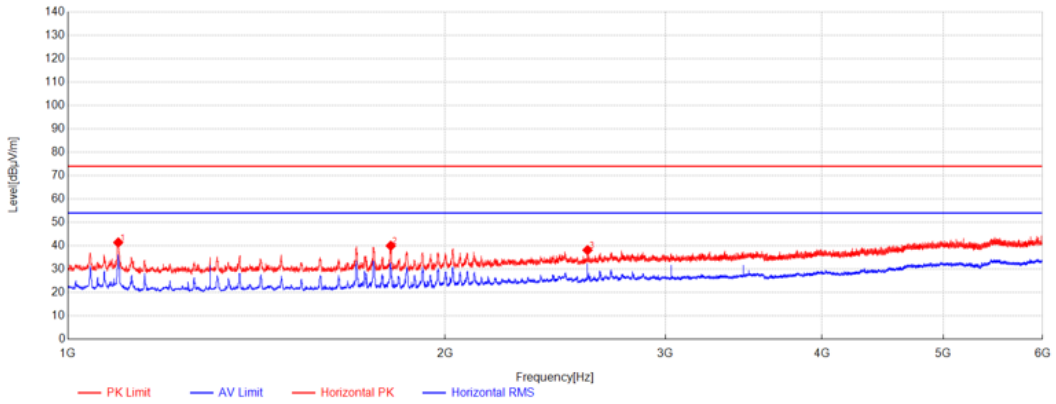
Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	30.853	5.55	24.44	29.99	40.00	-10.01	QP
2	34.037	5.45	22.42	27.87	40.00	-12.13	QP
3	136.939	13.32	20.27	33.59	43.50	-9.91	QP
4	184.490	18.00	17.86	35.86	43.50	-7.64	QP
5	361.714	15.35	22.72	38.07	46.00	-7.93	QP
6	435.590	55.08	24.52	79.60	Fundamental frequency		Peak
7	607.787	9.37	28.73	38.10	46.00	-7.90	QP

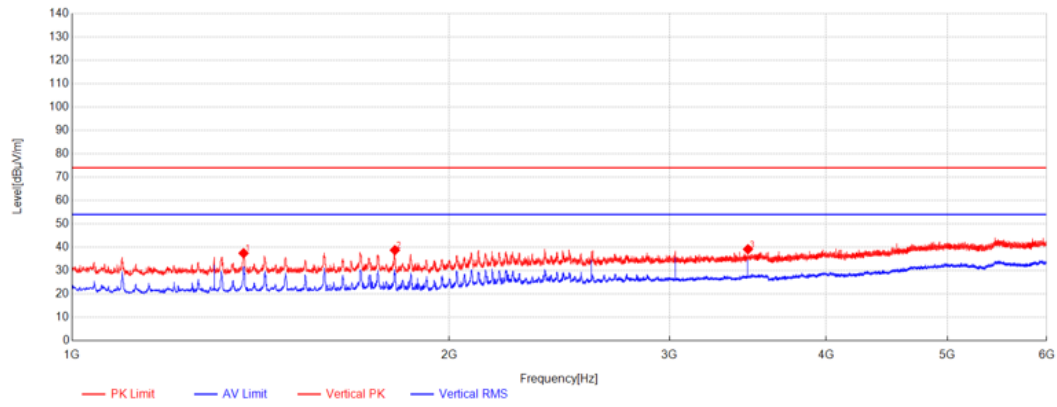
Above 1GHz

433.15MHz:



Data List

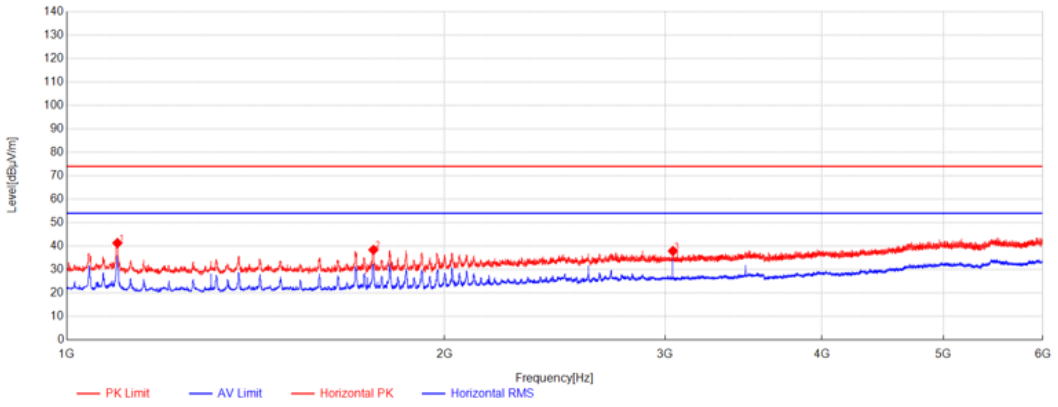
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1097.0833	73.15	23.20	-54.97	41.38	74.00	32.62	Horizontal
2	1810.4167	70.18	24.09	-54.30	39.97	74.00	34.03	Horizontal
3	2599.1667	64.82	27.08	-53.78	38.12	74.00	35.88	Horizontal



Data List

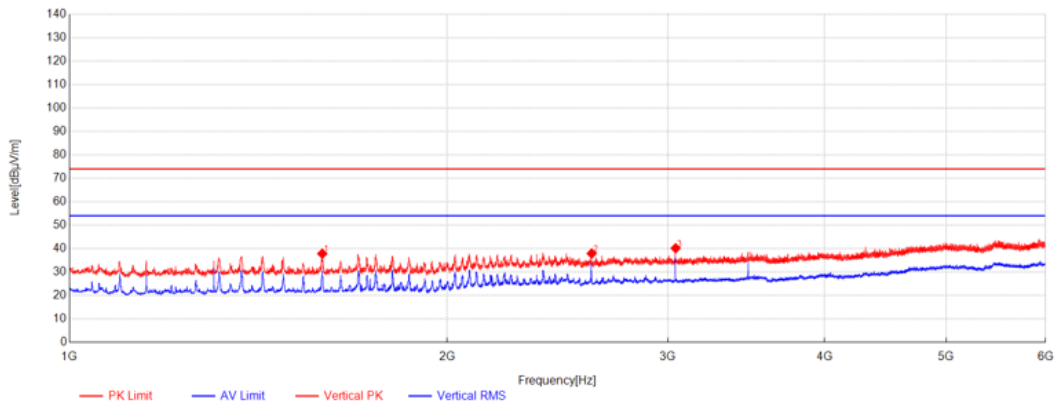
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1370.8333	68.37	23.79	-54.72	37.44	74.00	36.56	Vertical
2	1810.4167	68.94	24.09	-54.30	38.73	74.00	35.27	Vertical
3	3464.5833	62.62	28.40	-51.88	39.14	74.00	34.86	Vertical

434.65MHz:



Data List

NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1097.5	73.06	23.20	-54.97	41.29	74.00	32.71	Horizontal
2	1755.8333	68.83	23.72	-54.16	38.39	74.00	35.61	Horizontal
3	3042.5	63.00	27.95	-53.05	37.90	74.00	36.10	Horizontal



Data List

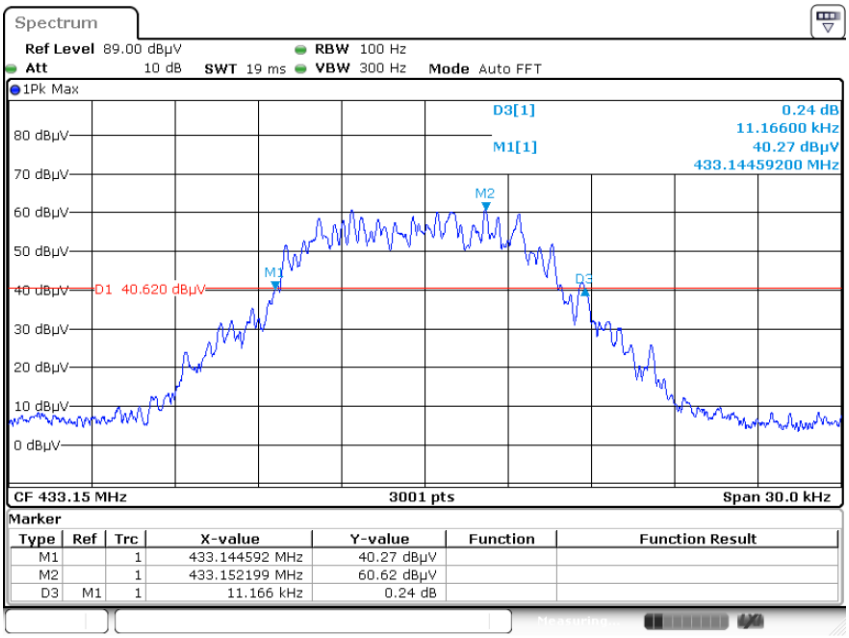
NO.	Frequency [MHz]	Reading [dBµV]	AF [dB/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity
1	1590.4167	68.91	23.80	-54.88	37.83	74.00	36.17	Vertical
2	2607.9167	64.52	27.10	-53.72	37.90	74.00	36.10	Vertical
3	3042.5	65.25	27.95	-53.05	40.15	74.00	33.85	Vertical

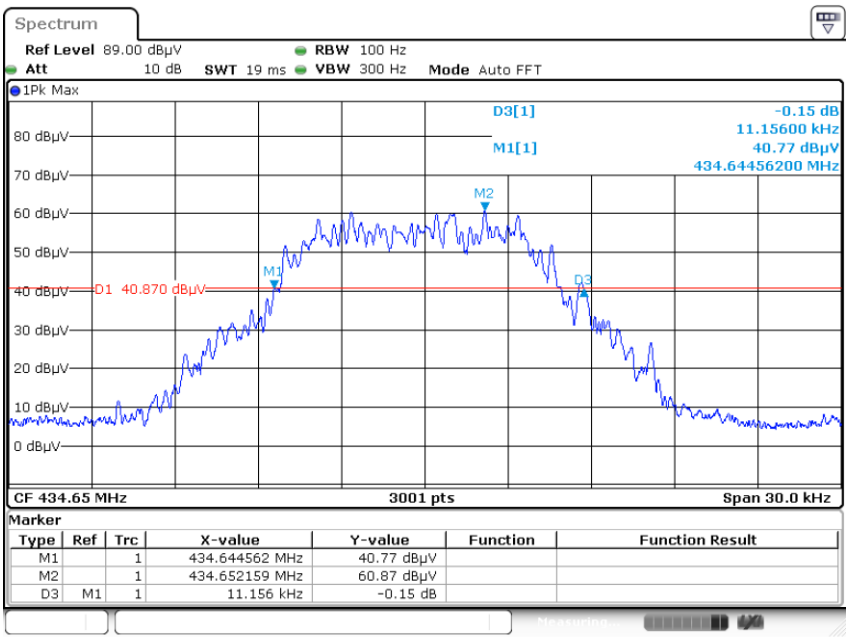
10.8 20dB Bandwidth

Measurement Data:

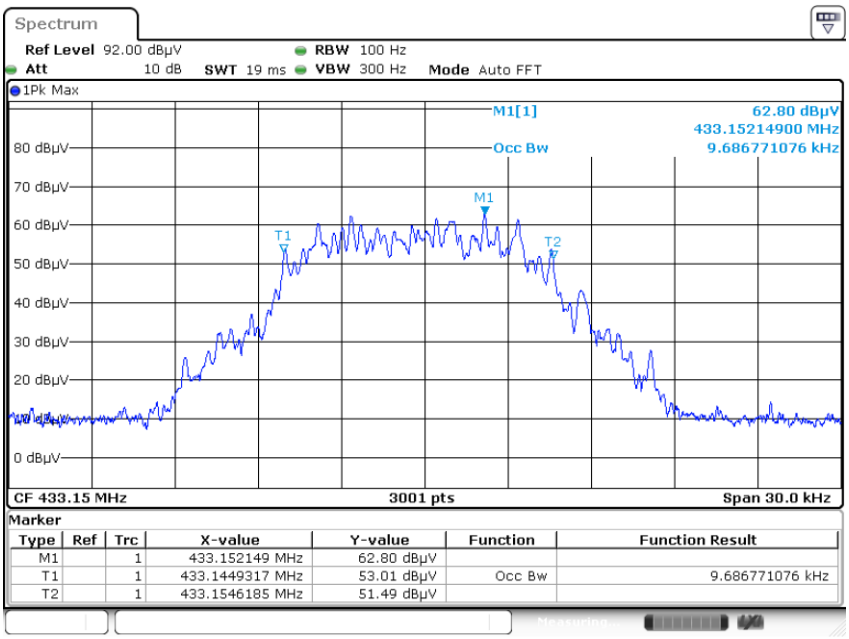
Frequency (MHz)	20dB bandwidth (kHz)	Limit (kHz)	Results
433.15	11.166	1084.8	Pass
434.65	11.156	1084.8	Pass

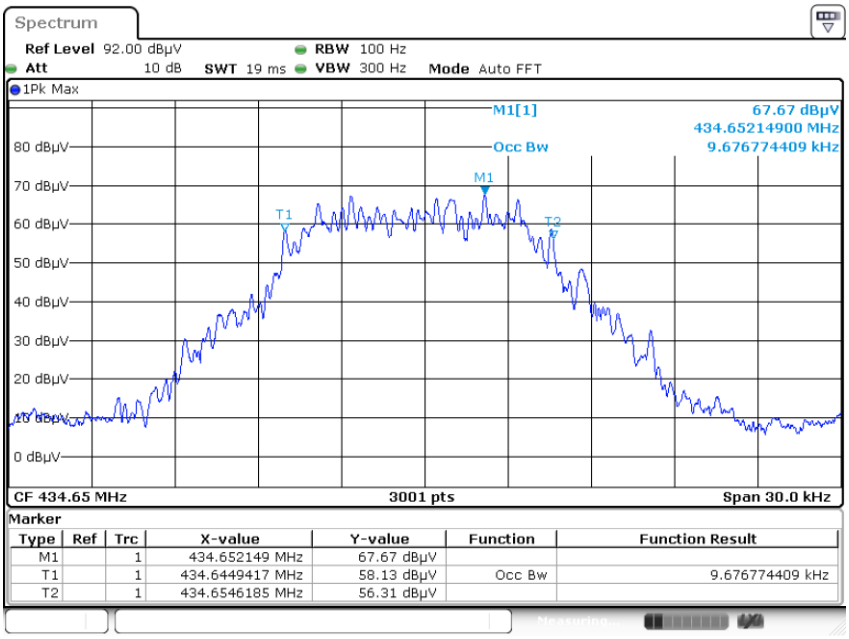
Test plot as follows:





10.9 99%OBW


Spectrum
Ref Level 92.00 dBµV
RBW 100 Hz
Att 10 dB
SWT 19 ms
VBW 300 Hz
Mode Auto FFT
1Pk Max
M1[1]
62.80 dBµV
433.15214900 MHz
Occ Bw
9.686771076 kHz
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
0 dBµV
CF 433.15 MHz
3001 pts
Span 30.0 kHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 433.152149 MHz 62.80 dBµV
T1 1 433.1449317 MHz 53.01 dBµV Occ Bw 9.686771076 kHz
T2 1 433.1546185 MHz 51.49 dBµV


Spectrum
Ref Level 92.00 dBµV
RBW 100 Hz
Att 10 dB
SWT 19 ms
VBW 300 Hz
Mode Auto FFT
1Pk Max
M1[1]
67.67 dBµV
434.65214900 MHz
Occ Bw
9.676774409 kHz
80 dBµV
70 dBµV
60 dBµV
50 dBµV
40 dBµV
30 dBµV
20 dBµV
0 dBµV
CF 434.65 MHz
3001 pts
Span 30.0 kHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 434.652149 MHz 67.67 dBµV
T1 1 434.6449417 MHz 58.13 dBµV Occ Bw 9.676774409 kHz
T2 1 434.6546185 MHz 56.31 dBµV

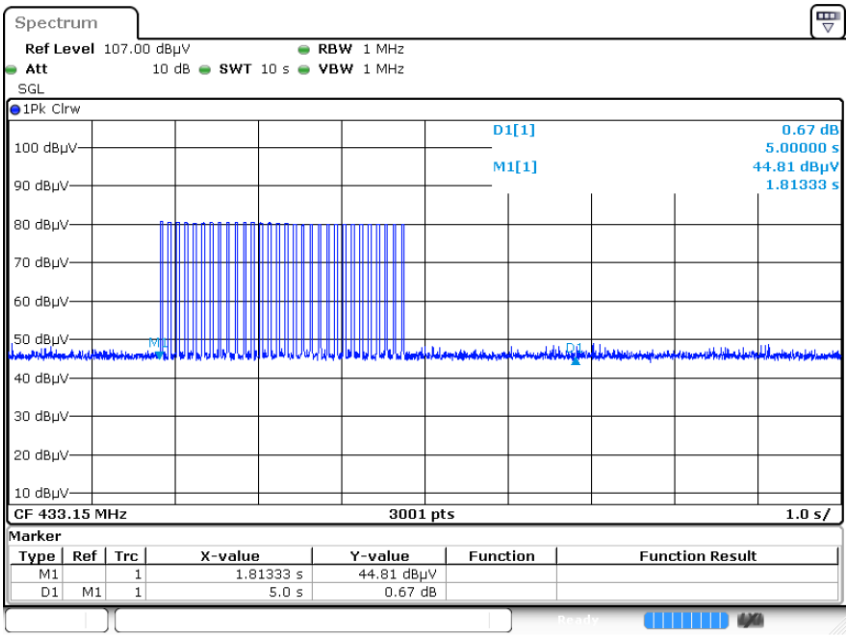
10.10 Dwell Time

Measurement Data:

433.15 MHz

Test item	Limit (s)	Results
Transmission Duration	⩽5s	Pass

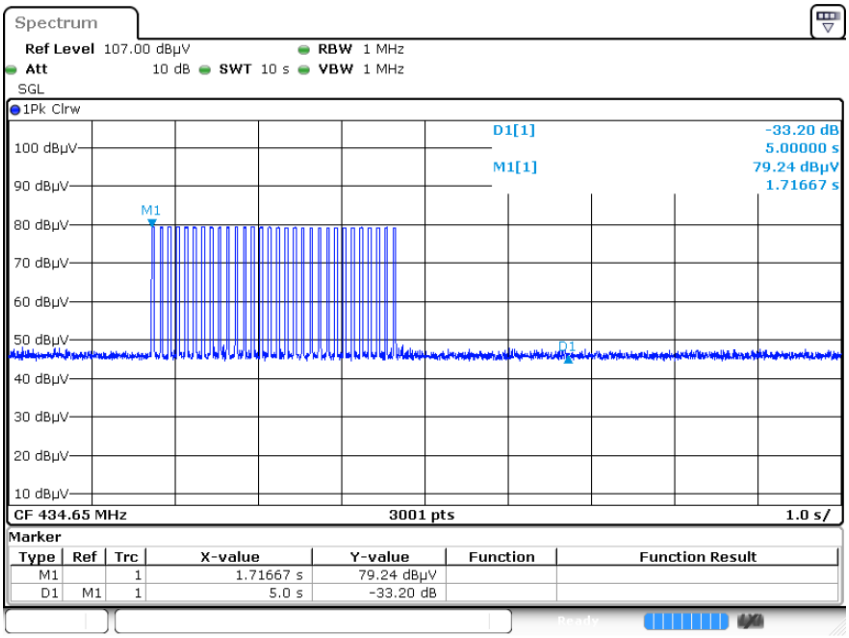
Test plot as follows:



434.65 MHz

Test item	Limit (s)	Results
Transmission Duration	⩽5s	Pass

Test plot as follows:



- End of the Report -