

TEST REPORT

Applicant: Sensata Technologies (Changzhou) Co.,Ltd.
Address: NO.18,Chuangxin Road,Xinbei District,Changzhou
City,Jiangsu,China,213031
Equipment Type: TPMS Sensor
Model Name: CZBG6FD4
Brand Name: Sensata
FCC ID: 2BAW4-CZBG6FD4
Test Standard: 47 CFR Part 15 Subpart C
(refer to section 3.1)
Sample Arrival Date: Jun. 23, 2026
Test Date: Jul. 16, 2026 - Jul. 23, 2026
Date of Issue: Aug. 06, 2026

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

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Li Ganming

Jim Liao

Revision History

Version	Issue Date	Revisions
<u>Rev. 01</u>	<u>Jul. 31, 2026</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Aug. 06, 2026</u>	<u>Updated section A.2</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	601, Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☒ Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen, Guangdong
	☐ 1/F., Building B, Ganghongji High-Tech Intelligent Industrial Park, No.1008, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Sensata Technologies (Changzhou) Co.,Ltd.
Address	NO.18,Chuangxin Road,Xinbei District,Changzhou City,Jiangsu,China,213031

2.2 Manufacturer Information

Manufacturer	Sensata Technologies (Changzhou) Co.,Ltd.
Address	NO.18,Chuangxin Road,Xinbei District,Changzhou City,Jiangsu,China,213031

2.3 General Description for Equipment under Test (EUT)

EUT Name	TPMS Sensor
Model Name Under Test	CZBG6FD4
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	433MHz
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The requirement for the following technical information of the EUT was tested in this report:

Modulation Type	FSK
Product Type	☒ Mobile ☐ Portable ☐ Fix Location
Operating Frequency	433.92MHz
Antenna Type	Loop Antenna

All channel was listed on the following table:

Channel number	Freq. (MHz)
0	433.92

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C	Intentional Radiators
2	ANSI C63.10-2020+ Cor. 1-2023+ C63.10a-2024 + Errata to C63.10a-2024	American National Standard for Procedures for Compliance Testing of Unlicensed Wireless Devices

3.2 Test Verdict

No.	Description	FCC Part No.	Test Result	Verdict
1	Antenna Requirement	15.203	--	Pass ^{Note1}
2	Conducted Emission	15.207	ANNEX A.1	N/A ^{Note2}
3	20 dB Bandwidth	15.231(c)	ANNEX A.2	Pass
4	Duty Cycle	15.35	ANNEX A.3	Pass
5	Field Strength of Fundamental Emissions	15.231(b)	ANNEX A.4	Pass
6	Radiated Emissions	15.209 15.231(b)	ANNEX A.5	Pass
7	Transmitting Time	15.231(a)	ANNEX A.6	Pass

Note 1: Please refer to section 5.1

Note 2: This EUT is powered solely by battery, Conducted Emission is not applicable.

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	49% to 55%	
Atmospheric Pressure	100 kPa to 102 kPa	
Temperature	NT (Normal Temperature)	+22.1℃ to +24.2℃
Working Voltage of the EUT	NV (Normal Voltage)	3.0V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	KEYSIGHT	N9020A	MY54432240	2026.03.24	2027.03.23
Test Antenna-Bi-Log	SCHWARZBECK	VULB 9168	00884	2025.03.01	2028.02.29
Test Antenna-Horn	SCHWARZBECK	BBHA 9120D	01631	2025.02.22	2028.02.21
Test Antenna-Horn	A-INFO	LB- 180400KF	J211060273	2024.06.15	2027.06.14
Anechoic Chamber	EMC Electronic Co, Ltd	9m*6m*6m	144	2026.01.19	2029.01.18
EMI Receiver	ROHDE&SCHWARZ	ESR7	103027	2025.10.30	2026.10.29
Test Antenna-Loop	SCHWARZBECK	FMZB 1519	1519-037	2024.01.23	2027.01.22
Anechoic Chamber(10m#2)	YiHeng	21m*11m*8 m	101-1	2025.10.16	2028.10.15

4.3 Measurement Uncertainty

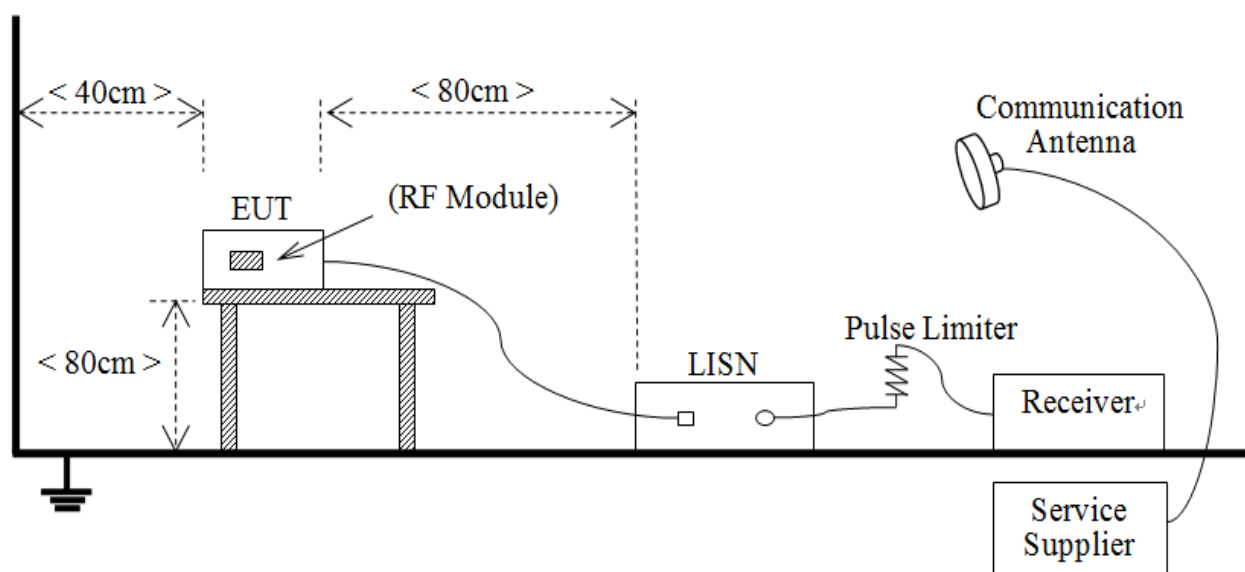
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

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

Parameters	Uncertainty
Occupied Channel Bandwidth	2.8%
RF output power, conducted	1.28 dB
Power Spectral Density, conducted	1.30 dB
Unwanted Emissions, conducted	1.84 dB
All emissions, radiated	5.36 dB
Temperature	0.8°C
Humidity	4%

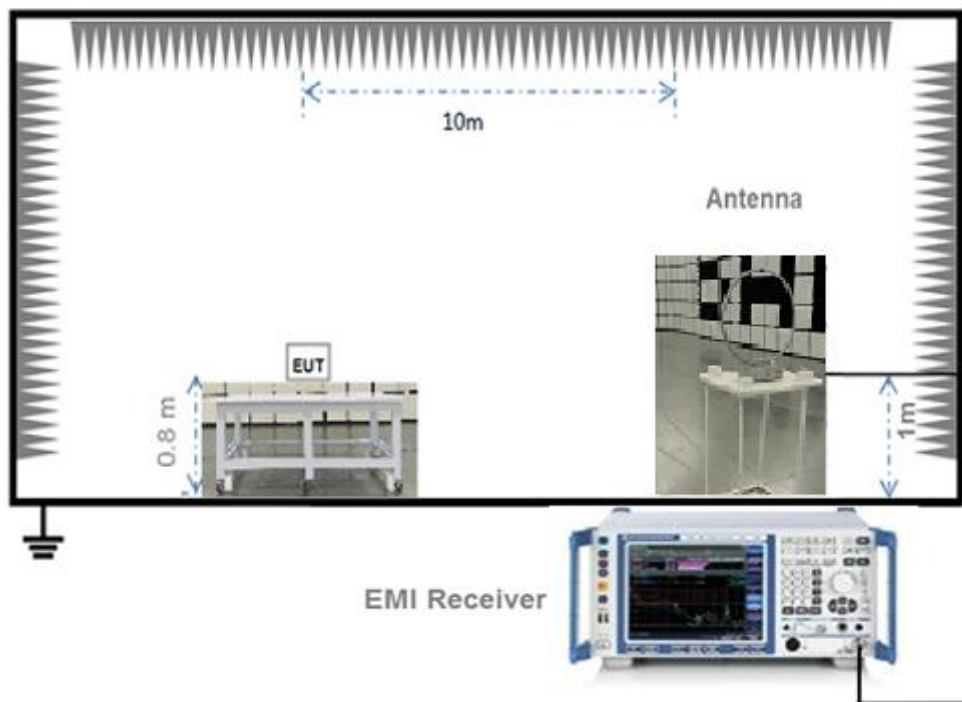
4.4 Description of Test Setup

4.4.1 For AC Power Supply Port Test



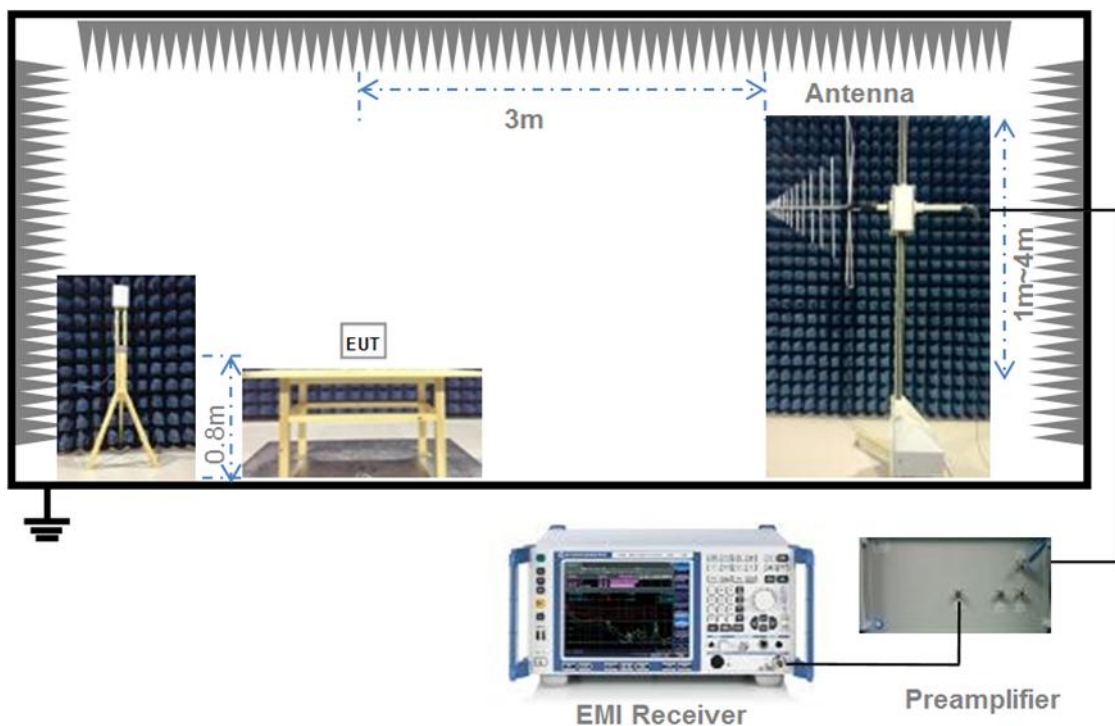
(Diagram 2)

4.4.2 For Radiated Test (Below 30 MHz)



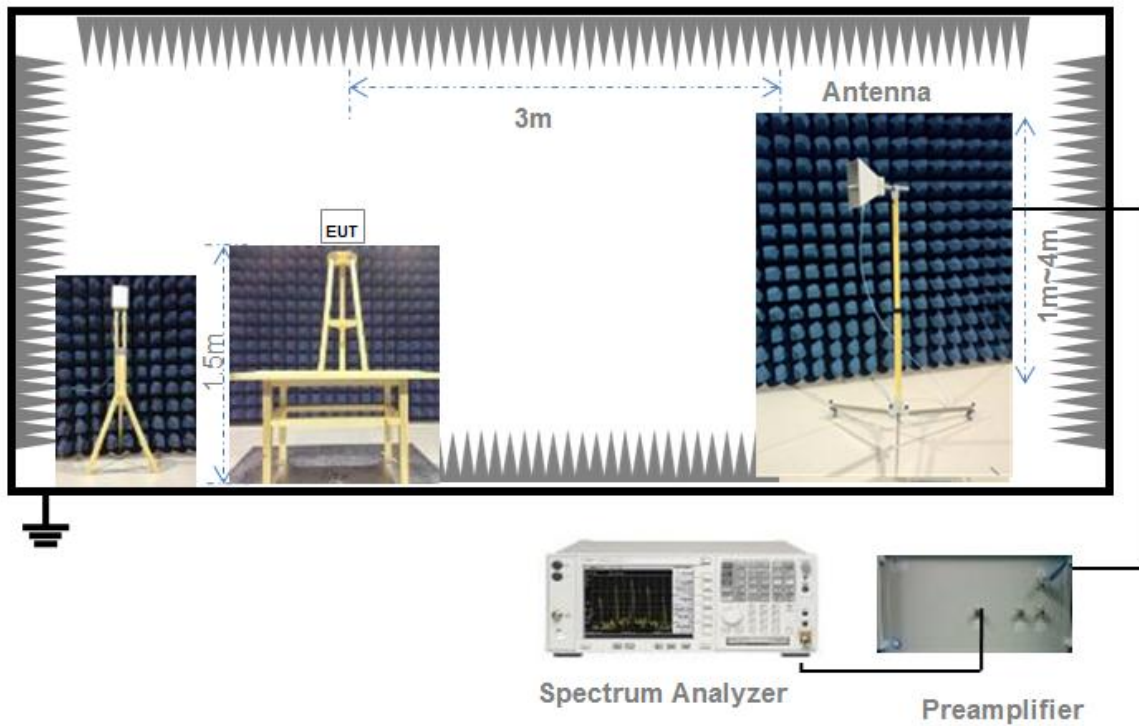
(Diagram 3)

4.4.3 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.4.4 For Radiated Test (Above 1 GHz)



(Diagram 5)

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Relevant Standards

FCC §15.203 & 15.247(b); RSS -Gen 6.8

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 shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

Protected Method	Description
The antenna is embedded in the product.	An embedded-in antenna design is used.

Reference Documents	Item
Photo	Please refer to the EUT Photo documents.

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Conducted Emission

5.2.1 Limit

FCC §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.2.2 Test Setup

See section 4.4.1 for test setup description for the AC power supply port. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.2.4 Test Result

Please refer to ANNEX A.1.

5.3 20 dB Bandwidth

5.3.1 Limit

FCC §15.231

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.

5.3.2 Test Setup

See section 4.4.3 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Span = two times and five times the OBW

RBW = 1% to 5% of the OBW

VBW $\geq$ three times RBW

Sweep = auto

Detector function = peak

Trace = max hold

5.3.4 Test Result

Please refer to ANNEX A.2.

5.4 Field Strength of Fundamental Emissions and Radiated Emissions

5.4.1 Limit

FCC §15.231 & §15.209

According to FCC section 15.231(b), In addition to the provisions of §15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

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	¹ 1250 to 3750	125 to 375
174-260	3750	375
260-470	¹ 3750 to 12500	375 to 1250
Above 470	12500	1250
¹ Linear interpolations.		

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)
0.009 - 0.490	2400/F(kHz)
0.490 - 1.705	24000/F(kHz)
1.705 - 30.0	30
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Note:

- For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.4.2 Test Setup

See section 4.4.2 to 4.4.4 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The measurement frequency range is from 30 MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented. The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

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

5.4.4 Test Result

Please refer to ANNEX A.4 & A.5.

5.5 Transmitting Time

5.5.1 Limit

FCC §15.231

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

(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

5.5.2 Test Setup

See section 4.4.3 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The EUT transmitter was activated, the spectrum analyzer single sweep was triggered while a command on the EUT was activated and plots were captured

5.5.4 Test Result

Please refer to ANNEX A.6.

ANNEX A TEST RESULT

A.1 Conducted Emissions

Note: Not applicable.

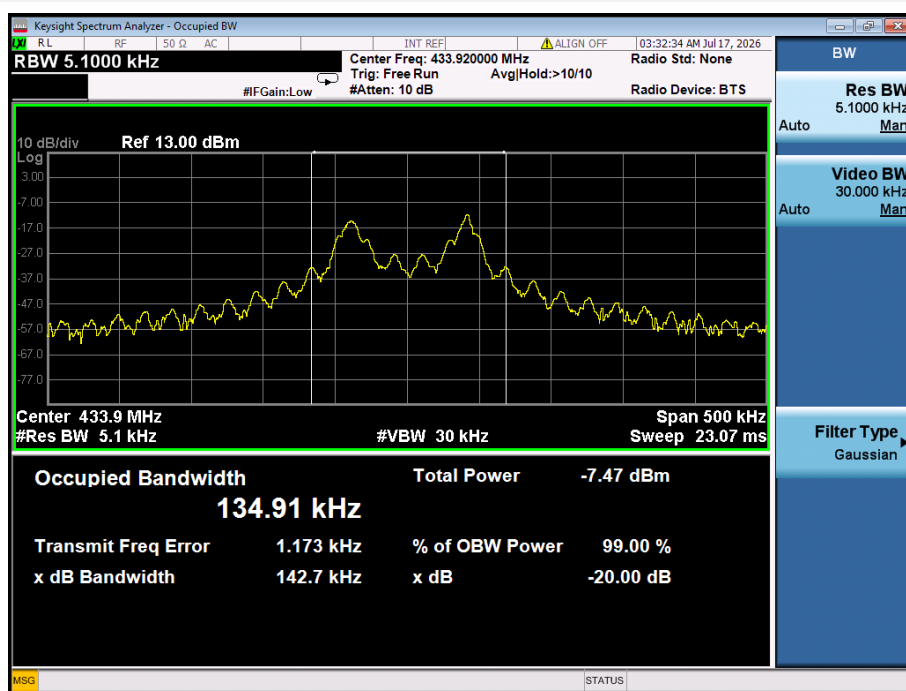
A.2 20 dB Bandwidth

Test Data

Frequency (MHz)	20 dB Bandwidth (kHz)	Limit (kHz)	Verdict
433.92	142.7	$433920 \times 0.25\% = 1084.8$	Pass

Test plots

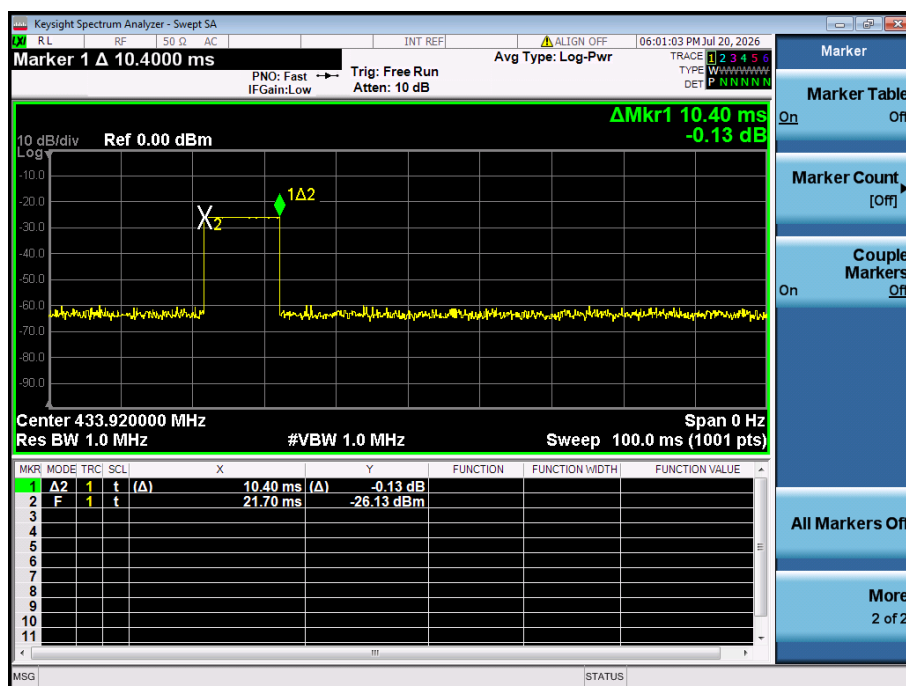
20 dB Bandwidth



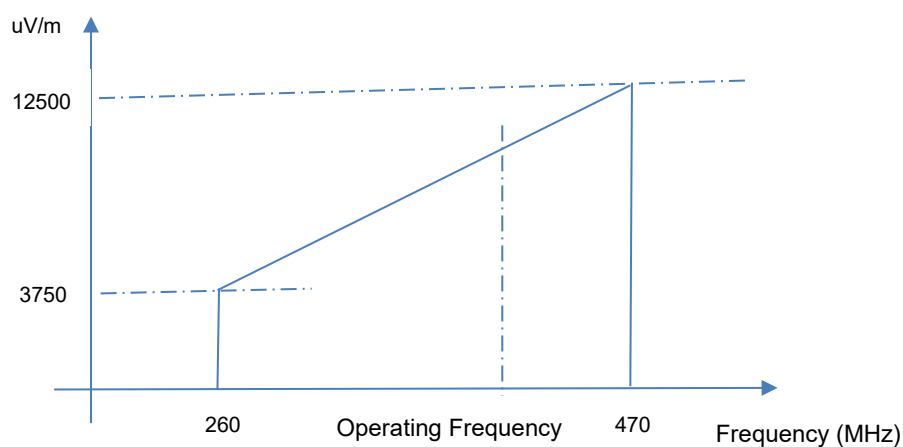
A.3 Duty cycle

Test Data and Plot

Data Transmissions		Number of pulses
The number of pulses Group		
Total transmissions duration	10.4ms	1
On time within 100 msec	10.4ms	1
Duty cycle correction factor	$20 \cdot \log(10.4/100) = -19.66 \text{ dB}$	



A.4 Field Strength of Fundamental Emissions



The Field Strength of Fundamental Emissions (Operating Frequency) is:

$$3750 \text{ uV/m} = 20 \cdot \log(3750) \text{ dBuV/m} = 71.48 \text{ dBuV/m}$$

$$12500 \text{ uV/m} = 20 \cdot \log(12500) \text{ dBuV/m} = 81.94 \text{ dBuV/m}$$

Test Data

Field Strength of Fundamental Emissions and Field strength of spurious emissions Value					
Operating Frequency (MHz)	Field Strength (dBuV/m)	Detector	Limit @3m (dBuV/m)	Margin (dB)	Antenna
433.9	73.84	PEAK	100.8	26.96	Vertical
	68.58	PEAK	100.8	32.22	Horizontal
	54.18	AVERAGE	80.8	26.62	Vertical
	48.92	AVERAGE	80.8	31.88	Horizontal

A.5 Radiated Emission

Note ¹: The symbol of “--” in the table which means not application.

Note ²: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

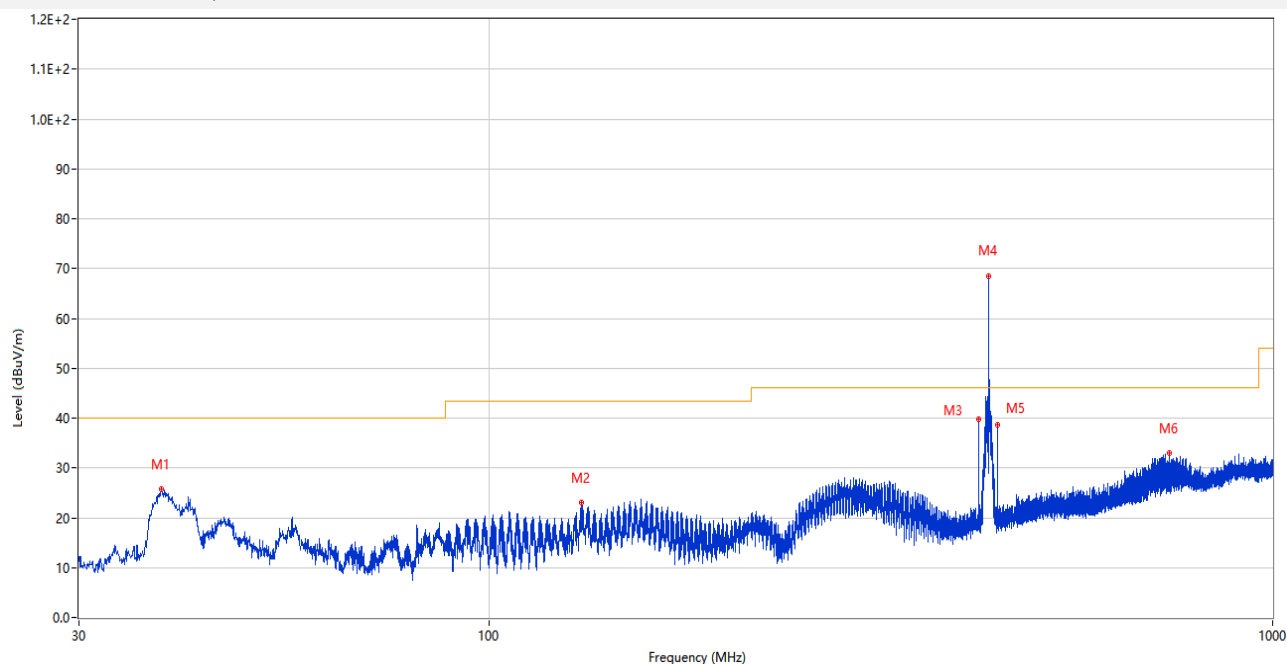
Note ³: The verdict please refer to the A.3 field strength of fundamental emissions and field strength of spurious emissions value.

Note ⁴: Limit field strength of fundamental: $20 \cdot \log((12500-3750)/(470-260)+(f_c-260)+3750) \text{ dBuV/m} + 20 \text{ dB}$
 $= 100.8 \text{ dBuV/m} @ 3 \text{ m (PK)}$

Note ⁵: Limit field strength of harmonics: $20 \cdot \log((1250-375)/(470-260)+(f_c-260)+375) \text{ dBuV/m} + 20 \text{ dB}$
 $= 80.8 \text{ dBuV/m} @ 3 \text{ m (PK)}$

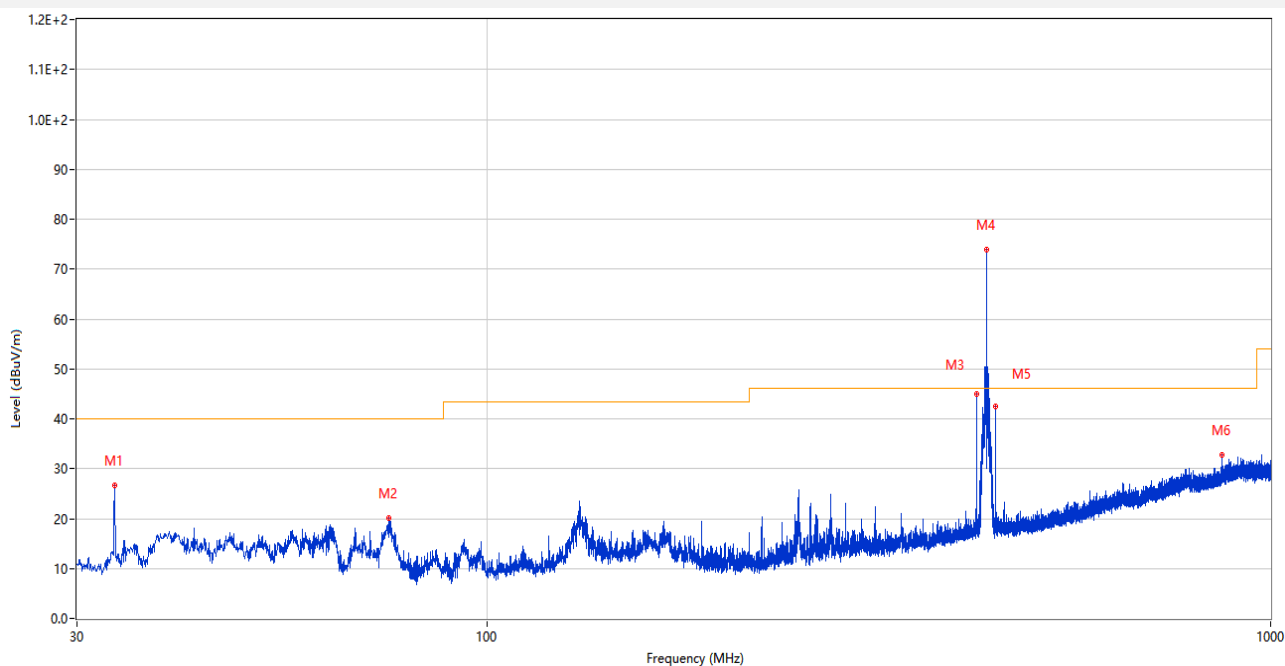
Test Data and Plots

30 MHz to 1 GHz, ANT H



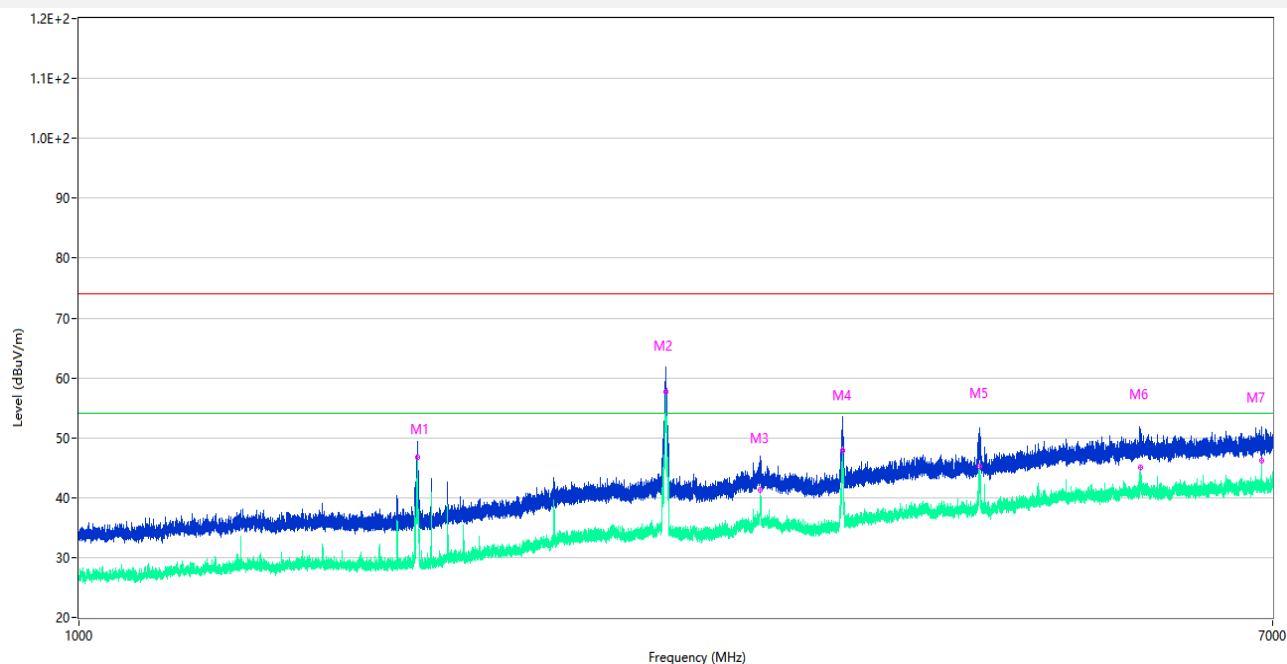
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	38.197	25.65	40.0	14.35	Peak	264.00	150	Horizontal	Pass
2	131.219	22.97	43.5	20.53	Peak	270.00	150	Horizontal	Pass
3	421.977	39.78	46.0	6.22	Peak	237.00	150	Horizontal	Pass
4	433.957	68.58	100.8	32.22	Peak	237.00	150	Horizontal	Pass
4*	433.957	48.92	80.8	31.88	AV	237.00	150	Horizontal	Pass
5	445.888	38.55	46.0	7.45	Peak	237.00	150	Horizontal	Pass
6	737.712	33.07	46.0	12.93	Peak	295.00	150	Horizontal	Pass

30 MHz to 1 GHz, ANT V



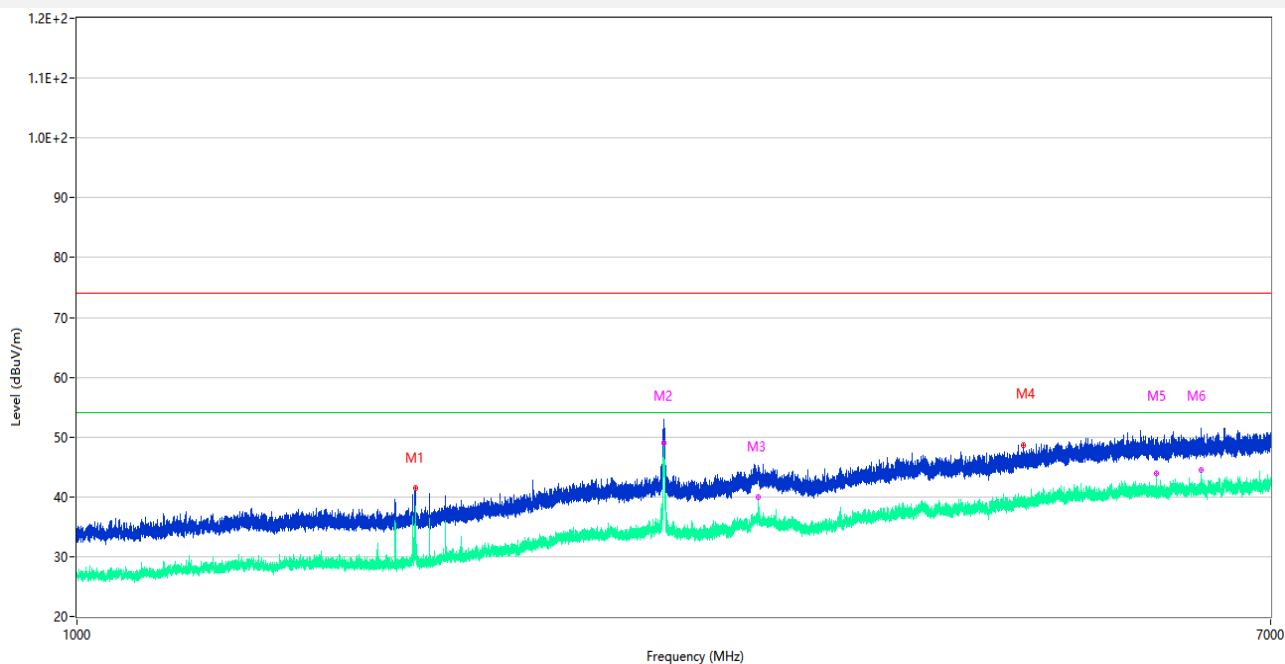
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	33.492	26.70	40.0	13.30	Peak	144.00	150	Vertical	Pass
2	75.008	20.06	40.0	19.94	Peak	317.00	150	Vertical	Pass
3	421.880	44.90	46.0	1.10	Peak	232.00	150	Vertical	Pass
4	433.957	73.84	100.8	26.96	Peak	232.00	150	Vertical	Pass
4*	433.957	54.18	80.8	26.62	AV	232.00	150	Vertical	Pass
5	445.888	42.48	46.0	3.52	Peak	232.00	150	Vertical	Pass
6	867.935	32.85	80.8	47.95	Peak	164.00	150	Vertical	Pass
6	867.935	11.27	60.8	49.53	Peak	164.00	150	Vertical	Pass

1 GHz to 7 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1735.600	49.29	80.2	30.91	Peak	0.00	150	Horizontal	Pass
1**	1735.600	46.73	60.2	13.47	AV	0.00	150	Horizontal	Pass
2	2603.800	61.03	80.2	19.17	Peak	319.00	150	Horizontal	Pass
2**	2603.800	57.63	60.2	2.57	AV	319.00	150	Horizontal	Pass
3	3037.800	44.38	80.2	35.82	Peak	99.00	150	Horizontal	Pass
3**	3037.800	41.19	60.2	19.01	AV	99.00	150	Horizontal	Pass
4	3471.000	50.37	80.2	29.83	Peak	53.00	150	Horizontal	Pass
4**	3471.000	47.88	60.2	12.32	AV	53.00	150	Horizontal	Pass
5	4341.800	50.14	80.2	30.06	Peak	53.00	150	Horizontal	Pass
5**	4341.800	45.20	60.2	15.00	AV	53.00	150	Horizontal	Pass
6	5647.000	48.57	80.2	31.63	Peak	53.00	150	Horizontal	Pass
6**	5647.000	45.09	60.2	15.11	AV	53.00	150	Horizontal	Pass
7	6875.200	51.54	80.2	28.66	Peak	199.00	150	Horizontal	Pass
7**	6875.200	46.25	60.2	13.95	AV	199.00	150	Horizontal	Pass

1 GHz to 7 GHz, ANT V



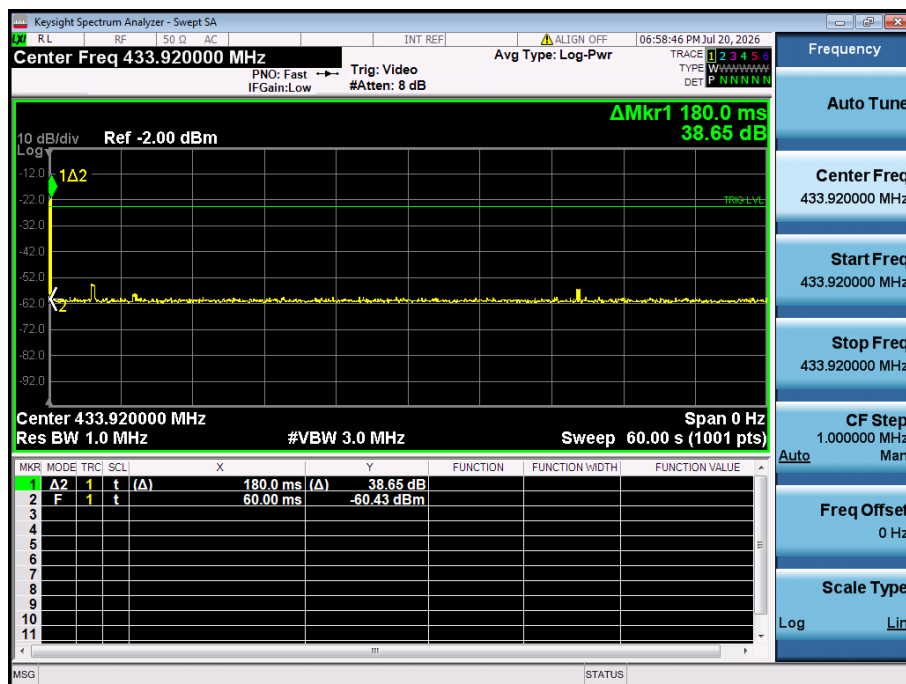
No.	Frequency (MHz)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	1735.500	41.52	80.2	38.68	Peak	244.00	150	Vertical	Pass
1**	1735.500	37.70	60.2	22.50	AV	244.00	150	Vertical	Pass
2	2603.500	52.37	80.2	27.83	Peak	136.00	150	Vertical	Pass
2**	2603.500	49.01	60.2	11.19	AV	136.00	150	Vertical	Pass
3	3037.400	44.34	80.2	35.86	Peak	262.00	150	Vertical	Pass
3**	3037.400	39.95	60.2	20.25	AV	262.00	150	Vertical	Pass
4	4679.400	48.60	74.0	25.40	Peak	352.00	150	Vertical	Pass
4**	4679.400	38.86	54.0	15.14	AV	352.00	150	Vertical	Pass
5	5808.200	48.94	74.0	25.06	Peak	13.00	150	Vertical	Pass
5**	5808.200	43.91	54.0	10.09	AV	13.00	150	Vertical	Pass
6	6250.000	51.47	74.0	22.53	Peak	308.00	150	Vertical	Pass
6**	6250.000	44.42	54.0	9.58	AV	308.00	150	Vertical	Pass

A.6 Transmitter Time

Test Data and Plot

The active time is less than 5 seconds

Active time



ANNEX B TEST SETUP PHOTOS

Please refer the document “Ti-AT26060589-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “Ti-AT26060589-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “Ti-AT26060589-AI.PDF”.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. The report without China inspection body and laboratory Mandatory Approval (CMA) mark has no effect of proving to the society.
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7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--