TEST REPORT

Report No.:	8225EU011703W
Applicant:	Autel Intelligent Technology Corp., Ltd.
Address:	Floor 2, Caihong Keji Building, 36 Hi-tech North Six Road, Songpingshan Community, Xili, Nanshan, Shenzhen, China
Product Name:	UNIVERSAL SMART KEY
Model No.:	IKEYTY8A4AL (refer to clause 2.4)
Trademark:	AUTEL
FCC ID:	WQ8-SK2311
Test Standard(s):	47 CFR Part 15 Subpart C
Date of Receipt:	Jan. 17, 2024
Test Date:	Jan. 17, 2024 – Jan. 25, 2024
Date of Issue:	Jan. 29, 2024

ISSUED BY:

SHENZHEN EU TESTING LABORATORY LIMITED

SHENZHEN EU TESTING LABORATORY LIMITED APPROVED

Prepared by:	**Reviewed and Approved by:**
Mikey Zhu/ Engineer	Sally Zhang/ Manager

Revision Record

Report Version	Issued Date	Description	Status
V0	Jan. 29, 2024	Original	Valid

Address: 101, Building B1, Fuqiao Fourth Area, Qiaotou Community, Fuhai Subdistrict, Baoan District, Shenzhen, Guangdong, China
Website: www.eu-test.com
Tel: (86)-755-2357-9714 Email: Service@eu-test.com

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2 General Information

2.1 Applicant Information

Applicant	Autel Intelligent Technology Corp., Ltd.
Address	Floor 2, Caihong Keji Building, 36 Hi-tech North Six Road, Songpingshan Community, Xili, Nanshan, Shenzhen, China

2.2 Manufacturer Information

Manufacturer	Autel Intelligent Technology Corp., Ltd.
Address	Floor 2, Caihong Keji Building, 36 Hi-tech North Six Road, Songpingshan Community, Xili, Nanshan, Shenzhen, China

2.3 Factory Information

Factory	Autel Intelligent Technology Corp., Ltd. Guangming Branch
Address	601 on the East Side and 601 on the West Side of the Third Electronic Building, and 601 on the Fourth Machinery Building, Yanxiang Science and Technology Industrial Park, Gaoxin Road, Dongzhou Community, Guangming Street, Guangming District, Shenzhen City, Guangdong Province, P.R. China

2.4 General Description of E.U.T.

Product Name	UNIVERSAL SMART KEY
Model No. Under Test	IKEYTY8A4AL
List Model No.	IKEYTY8A3AL, IKEYTY8A3BL
Description of Model differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in the appearance color & number of buttons and model name. (this information provided by the customer)
Rating(s)	3VDC(Power Supplied by CR2032*1)
Product Type	☐ Mobile ☒ Portable ☐ Fix Location
Test Sample No.	-1/1(Normal Sample)
Hardware Version	SK2311_TY2_V5
Software Version	V01.01.00
Remark	For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.5 Technical Information of E.U.T.

Network and Wireless Connectivity	315 MHz & 433.92 MHz

The requirement for the following technical information of the EUT was tested in this report:

Operating Frequency	315 MHz & 433.92 MHz
Number of Channel	2
Modulation Type	ASK, FSK
Antenna Type	PCB Antenna
Antenna Gain(Peak)	315 MHz: -1.24 dBi 433.92 MHz: -1.69 dBi

All channel was listed on the following table:

No.	Channel	Freq. (MHz)	Modulation
1	**01**	315	ASK
2		315	FSK
3	**02**	433.92	ASK
4		433.92	FSK

3 Test Summary

3.1 Test Standard

The tests were performed according to following standards:

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C Section 15.231	Intentional radiators of radio frequency equipment Periodic Operation in the band 40.66-40.70MHz and above 70MHz
2	ANSI C63.10-2020	American National Standard for Testing Unlicensed Wireless Devices

Remark:
Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

3.2 Test Verdict

No.	Description	FCC Part No.	Verdict	Remark
1	Antenna Requirement	15.203	Pass	--
2	Conducted Emission at AC Power Line	15.207	Pass	--
3	20dB Bandwidth	15.231(c)	Pass	--
4	Transmit Time	15.231(a)	Pass	--
5	Duty Cycle	15.35	Pass	--
6	Field Strength of Fundamental Emissions and Spurious Emission	15.231(b)	Pass	--
7	Radiated Emission	15.205, 15.209, 15.231(b)	Pass	--

3.3 Test Laboratory

Test Laboratory	Shenzhen EU Testing Laboratory Limited
Address	101, Bldg. B1, Fuqiao Fourth Area, Qiaotou Community, Fuhai Subdistrict, Baoan District, Shenzhen, Guangdong, China
Designation Number	CN1368
Test Firm Registration Number	952583

4 Test Configuration

4.1 Test Environment

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

Relative Humidity	30% to 60%	
Atmospheric Pressure	86 kPa to 106 kPa	
Temperature	NT (Normal Temperature)	+15℃ to +35℃
Working Voltage of the EUT	NV (Normal Voltage)	3VDC

4.2 Test Equipment

Conducted Emission at AC power line					
Equipment	**Manufacturer**	**Model No**	**Serial No**	**Cal Date**	**Cal Due Date**
L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	EE-004	2024/01/09	2025/01/08
EMI Test Receiver	Rohde & Schwarz	ESCI	EE-005	2024/01/09	2025/01/08
Test Software	Farad	EZ-EMC	EE-014	N.C.R	N.C.R

Radiated Emission and RF Test					
Equipment	**Manufacturer**	**Model No**	**Serial No**	**Cal Date**	**Cal Due Date**
EMI Test Receiver	ROHDE & SCHWARZ	ESPI	EE-006	2024/01/09	2025/01/08
Bilog Broadband Antenna	SCHWARZBECK	VULB 9163	EE-007	2024/01/09	2025/01/08
Double Ridged Horn Antenna	A-INFOMW	LB-10180-NF	EE-008	2023/01/14	2026/01/13
Pre-amplifier	Agilent	8447D	EE-009	2023/01/12	2026/01/11
Pre-amplifier	Agilent	8449B	EE-010	2024/01/09	2025/01/08
MXA Signal Analyzer	Agilent	N9020A	EE-011	2024/01/09	2025/01/08
MXG RF Vector Signal Generator	Agilent	N5182A	EE-012	2024/01/09	2025/01/08
Test Software	Farad	EZ-EMC	EE-015	N.C.R	N.C.R
MIMO Power Measurement Module	TSTPASS	TSPS 2023R	EE-016	2023/05/17	2024/05/16
RF Test Software	TSTPASS	TS32893 V2.0	EE-017	N.C.R	N.C.R
Wideband Radio Communication Tester	ROHDE & SCHWARZ	CMW500	EE-402	2023/02/16	2024/02/15
Loop Antenna	TESEQ	HLA6121	EE-403	2023/02/16	2024/02/15
MXG RF Analog Signal Generator	Agilent	N5181A	EE-406	2023/02/16	2024/02/15
Constant Temperature Humidity Chamber	Guangxin	GXP-401	ES-002	2023/07/31	2024/07/30

4.3 Description of Support Unit

No.	Title	Manufacturer	Model No.	Serial No.
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4.4 Test Mode

No.	Test Modes	Description
TM1	TX-315M-ASK	Keep the EUT connect to AC power line and works in continuously 315 MHz transmitting in ASK modulation mode.
TM2	TX-315M-FSK	Keep the EUT connect to AC power line and works in continuously 315 MHz transmitting in FSK modulation mode.
TM3	TX-433.92M-ASK	Keep the EUT connect to AC power line and works in continuously 433.92 MHz transmitting in ASK modulation mode.
TM4	TX-433.92M-FSK	Keep the EUT connect to AC power line and works in continuously 433.92 MHz transmitting in FSK modulation mode.

Note:
We have pre-tested all three model numbers (IKEYTY8A4AL, IKEYTY8A3AL, IKEYTY8A3BL), and only the worst case with the model number (IKEYTY8A4AL) are reported.

4.5 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.

Test Item	Measurement Uncertainty
Conducted Emission	2.64 dB
Occupied Channel Bandwidth	2.8 %
RF Output Power, conducted	0.68 dB
Power Spectral Density, conducted	1.37 dB
Unwanted Emissions, conducted	1.84 dB
All Emissions, radiated	5.11 dB
Transmit Time	0.01 ms
Duty Cycle	0.05 %
Temperature	0.8°C
Humidity	4%

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Condition

None.

5 Test Items

5.1 Antenna requirement

5.1.1 Test Requirement

Test Requirement	According to FCC §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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

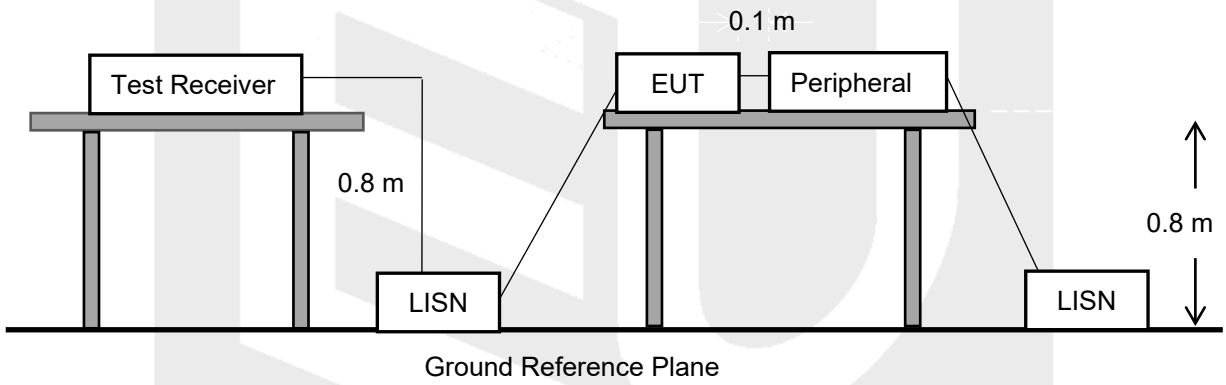
The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Conducted Emission at AC Power Line

5.2.1 Test Requirement

Test Requirement	Except as shown in paragraphs (b)and (c)of this section, 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 or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).
Test Limit	Frequency of emission (MHz) / Conducted limit (dBμV): Quasi-peak / Average 0.15-0□5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 *Decreases with the logarithm of the frequency.
Test Method	ANSI C63.10-2020 section 6.2

5.2.2 Test Setup Diagram



5.2.3 Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipment. Both sides of AC line are investigated to find out the maximum conducted emission according to the test standard regulations during conducted emission measurement.
The bandwidth of the field strength meter (R&S Test Receiver ESCI) is set at 9kHz in 150kHz~30MHz.
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 Data

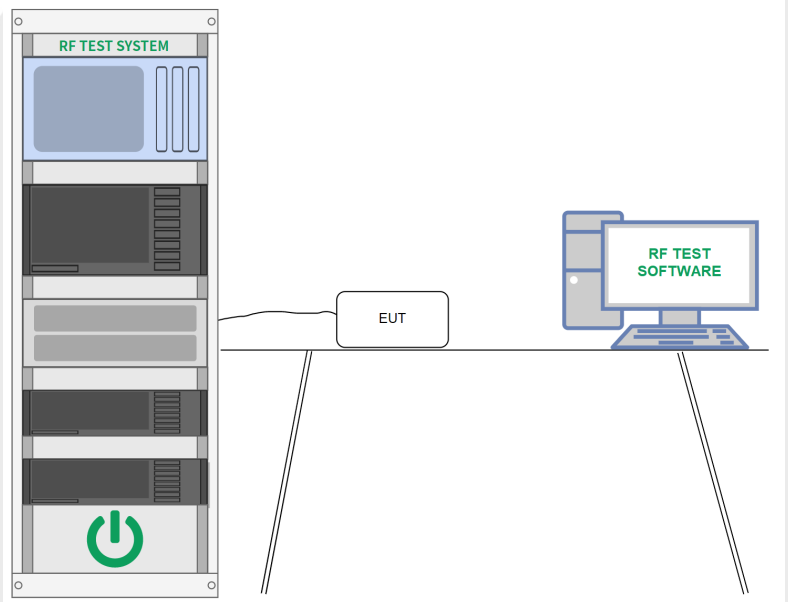
Not applicable.
The EUT can't be connected to AC power line, so there is no need to conduct this test item.

5.3 20dB Bandwidth

5.3.1 Test Requirement

Test Requirement	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.
Test Method	ANSI C63.10-2020, section 6.9.2

5.3.2 Test Setup Diagram



5.3.3 Test Procedure

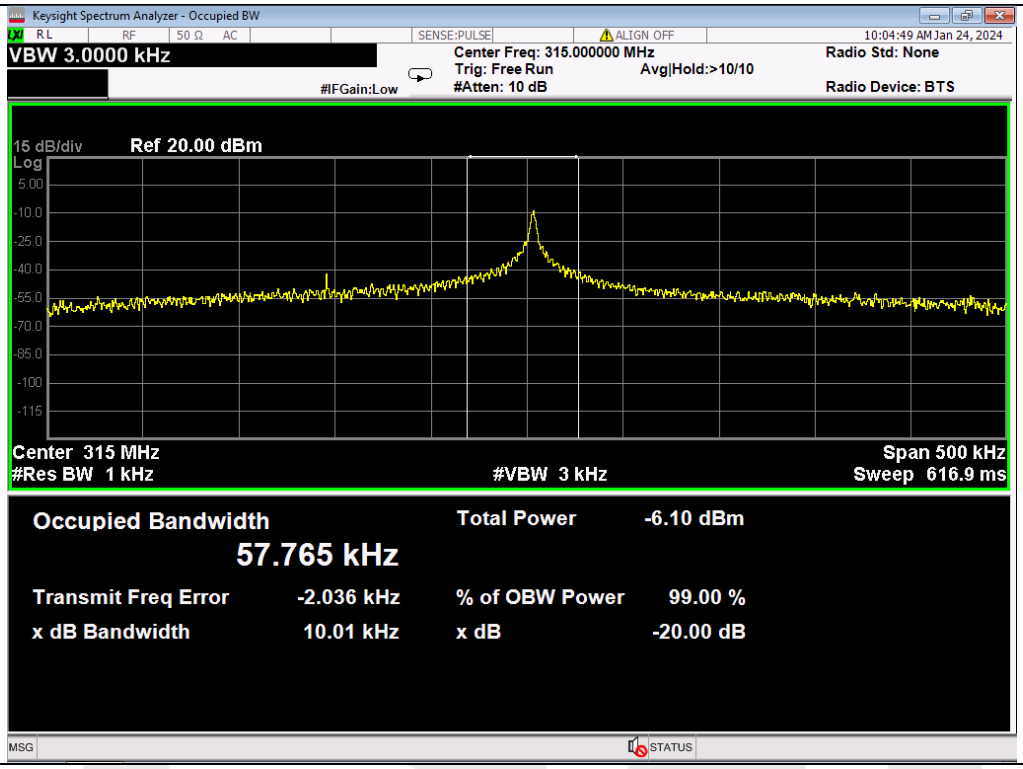
a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.
c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
d) Steps a) through c) might require iteration to adjust within the specified tolerances.
e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target "−xx dB down" requirement; that is, if the requirement calls for measuring the −20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.
f) Set detection mode to peak and trace mode to max hold.
g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
h) Determine the "−xx dB down amplitude" using [(reference value) − xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.
i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to

stabilize. Otherwise, the trace from step g) shall be used for step j).
j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "-xx dB down amplitude" determined in step h). If a marker is below this "–xx dB down amplitude" value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the "-xx dB down amplitude" determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.
The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

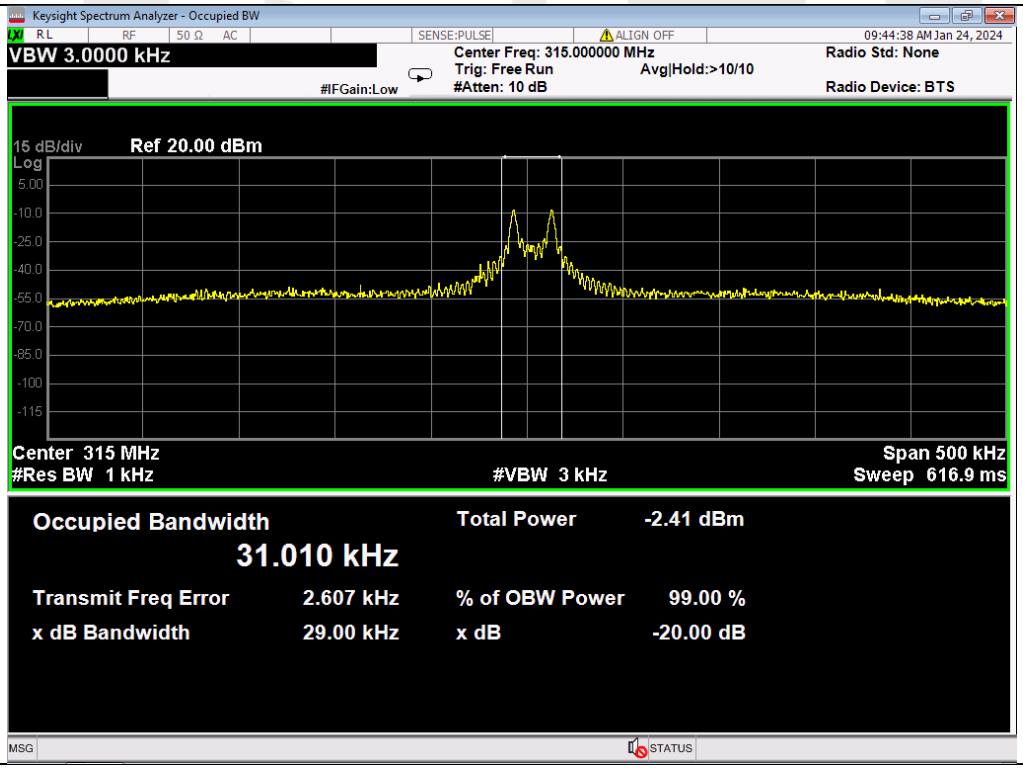
5.3.4 Test Data

TM	Frequency (MHz)	20 dB Bandwidth (kHz)	Limit (kHz)	Verdict
TX-315M-ASK	315	10.01	≤787.50	Pass
TX-315M-FSK	315	29.00	≤787.50	Pass
TX-433.92M-ASK	433.92	9.98	≤1084.80	Pass
TX-433.92M-FSK	433.92	29.39	≤1084.80	Pass

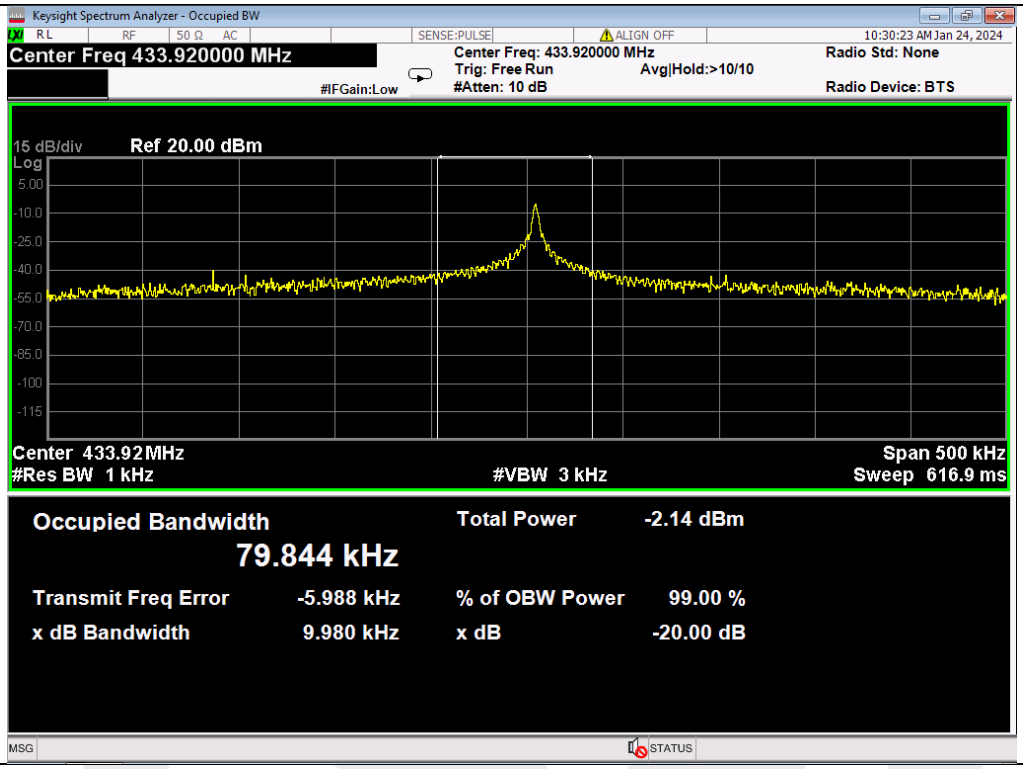
Test Plot-- TX-315M-ASK



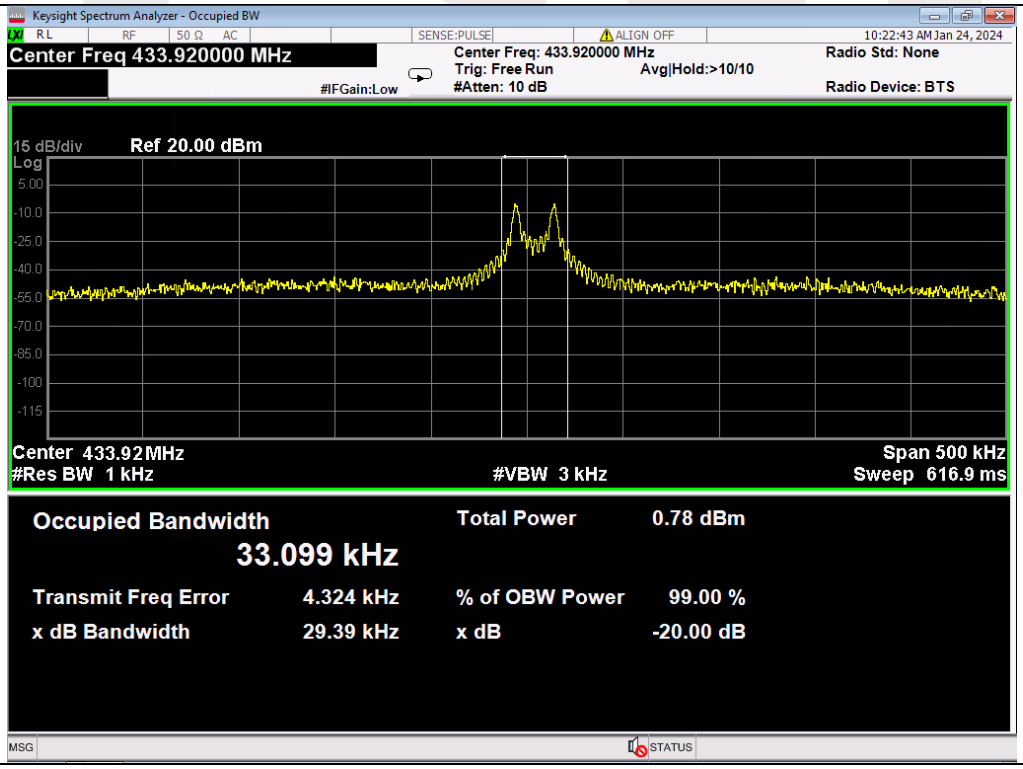
Test Plot-- TX-315M-FSK



Test Plot-- TX-433.92M-ASK



Test Plot-- TX-433.92M-FSK

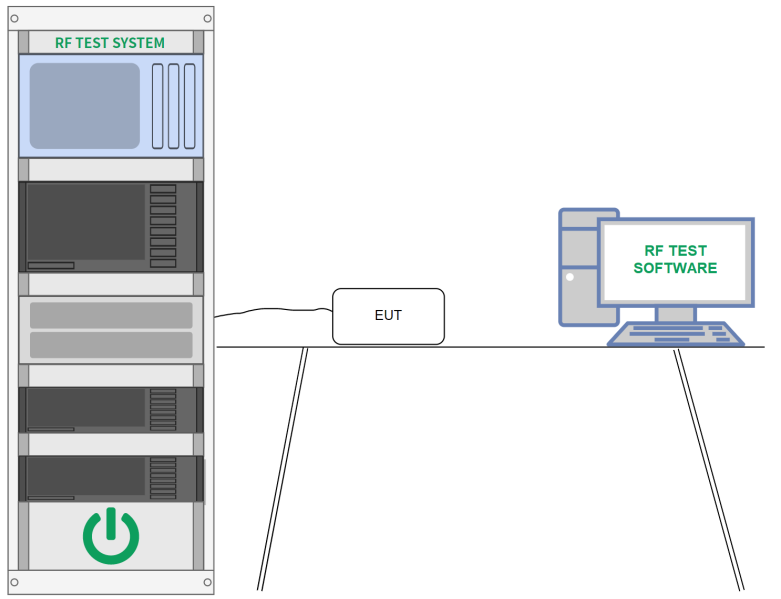


5.4 Transmit Time

5.4.1 Test Requirement

Test Requirement	The following conditions shall be met to comply with the provisions for this periodic operation: (1) A manually operated transmitter shall employ a switch that will auto-matically deactivate the transmitter within not more than 5 seconds of being released. (2)A transmitter activated automati-cally shall cease transmission within 5seconds after activation.
Test Method	ANSI C63.10-2020, section 7.4

5.4.2 Test Setup Diagram



5.4.3 Test Procedure

For evaluation of periodic operation characteristics, the following procedure may be used
a) Trigger the spectrum analyzer sweep on the RF waveform of the unlicensed wireless device.
b) Set the spectrum analyzer sweep time greater than the specified time for periodic operation.
c) Manually activate and deactivate the unlicensed wireless device and confirm that it ceases transmission within the specified time of deactivation.
d) Document the test results.
e) Verify and document that periodic transmissions at regular predetermined intervals do not exist except where regulatory requirements allow polling or supervision transmissions. including data, to determine system integrity. Compliance is addressed by an attestation supported by the equipment theory of operation.

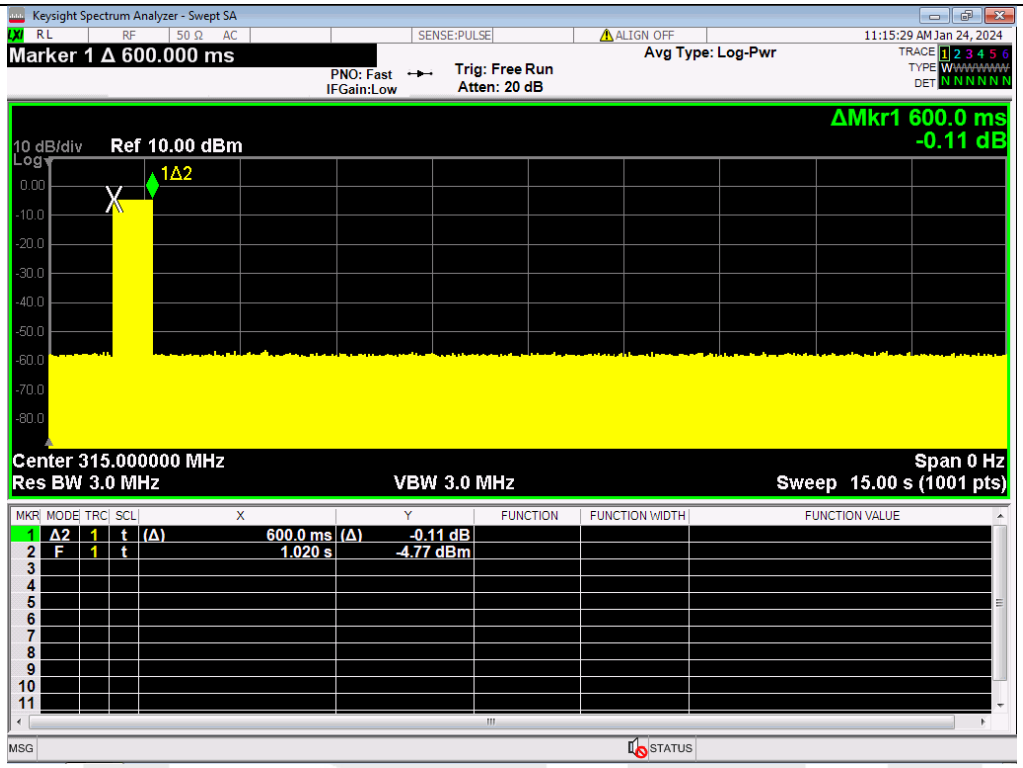
5.4.4 Test Data

PASS.
Please refer to the following pages.

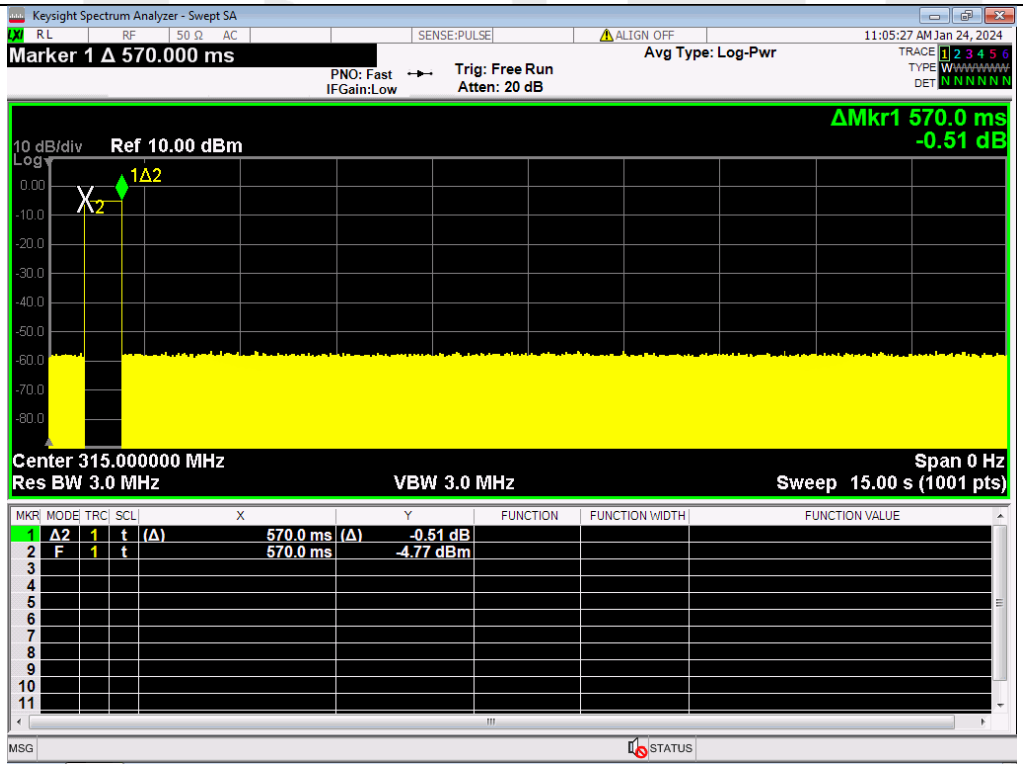
Transmit Time

TM	Frequency (MHz)	Transmit Time (s)	Limit (s)	Verdict
TX-315M-ASK	315	0.600	≤5	Pass
TX-315M-FSK	315	0.570	≤5	Pass
TX-433.92M-ASK	433.92	0.570	≤5	Pass
TX-433.92M-FSK	433.92	0.570	≤5	Pass

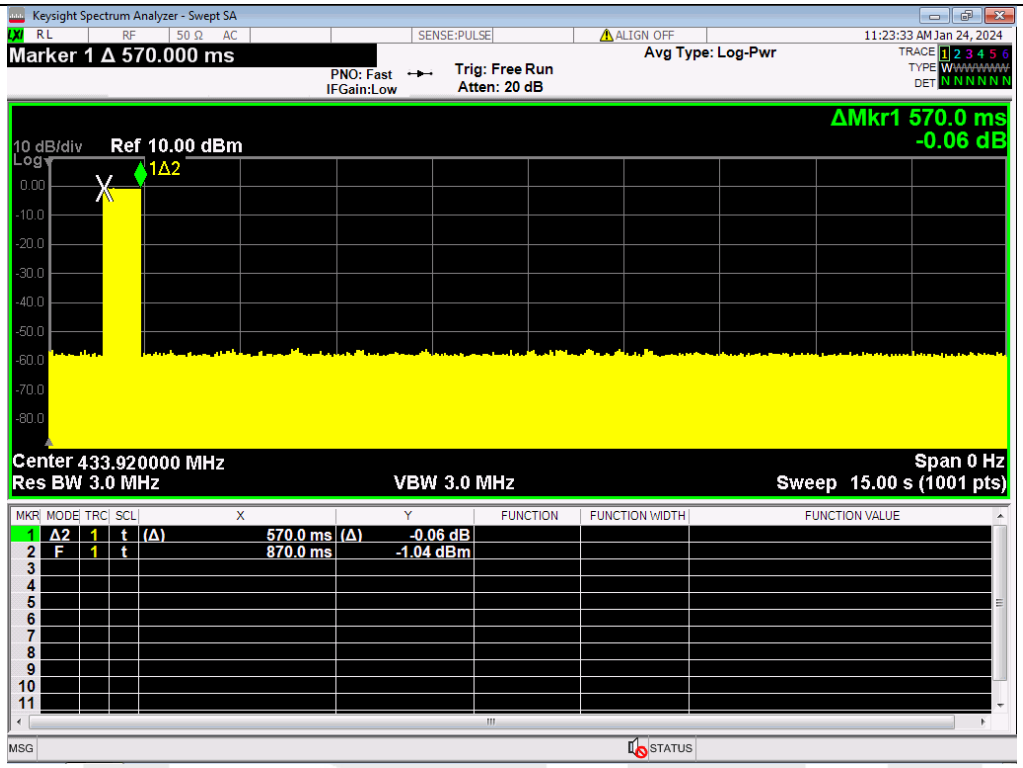
Test Plot-- TX-315M-ASK



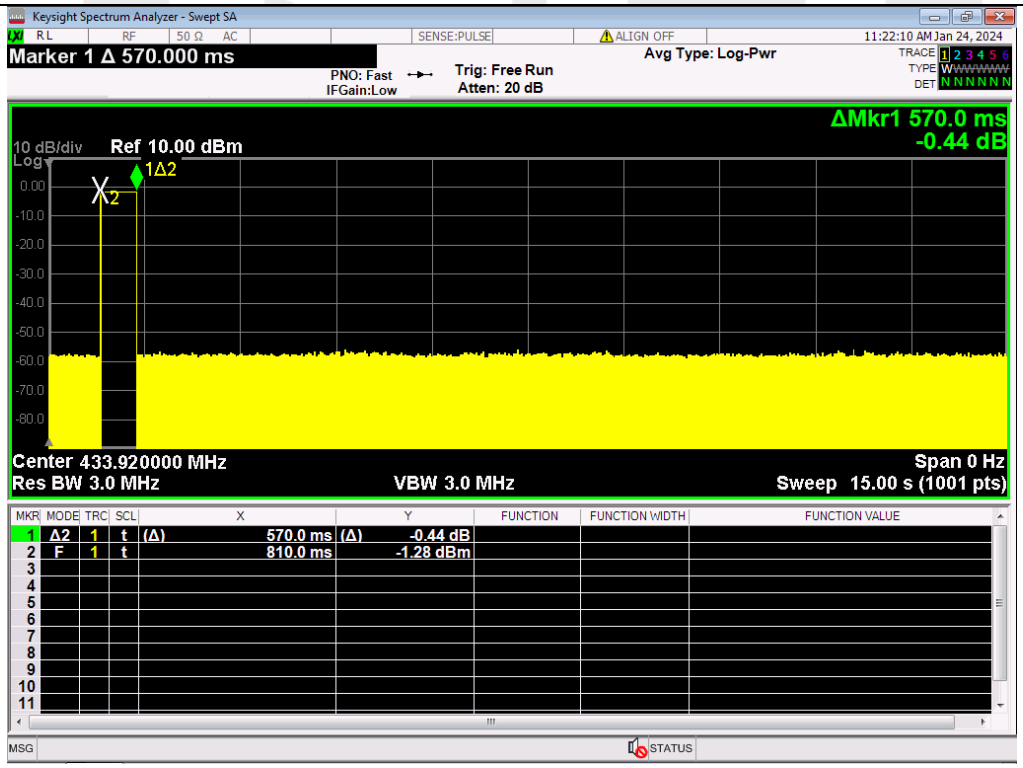
Test Plot-- TX-315M-FSK



Test Plot-- TX-433.92M-ASK



Test Plot-- TX-433.92M-FSK

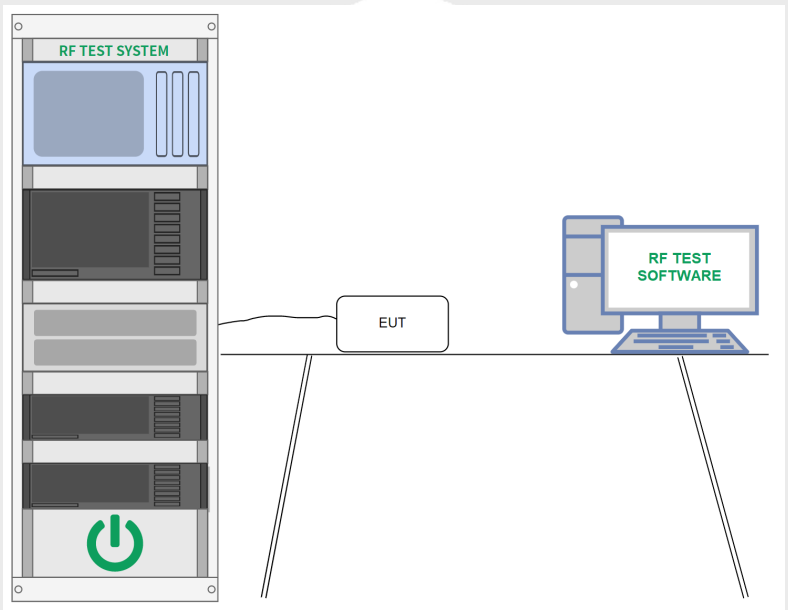


5.5 Duty Cycle

5.5.1 Test Requirement

Test Requirement	When average emission measurements below 1000MHz, there also is a limit on the peak level of the radio frequency emission. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Note that the use of a pulse desensitization correction factor may be needed to determine the total peak emission level.
Test Method	ANSI C63.10-2020, section 7.5

5.5.2 Test Setup Diagram



5.5.3 Test Procedure

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.
Set the center frequency of the instrument to the center frequency of the transmission.
Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.
Set VBW ≥ RBW. Set detector = peak or average.

5.5.4 Test Data

PASS.
Please refer to the following pages.

Duty Cycle Correct Factor

Test Mode	TX-315M-ASK
Long pulse duration	0.7010 ms
Number of long pulse	35
Short pulse duration	0.3458 ms
Number of short pulse	71
On time within 100 msec	0.7010*35+ 0.3458*71=49.0868 ms
Duty Cycle Correct Factor (dB)	20*log(49.0868/100)= -6.18

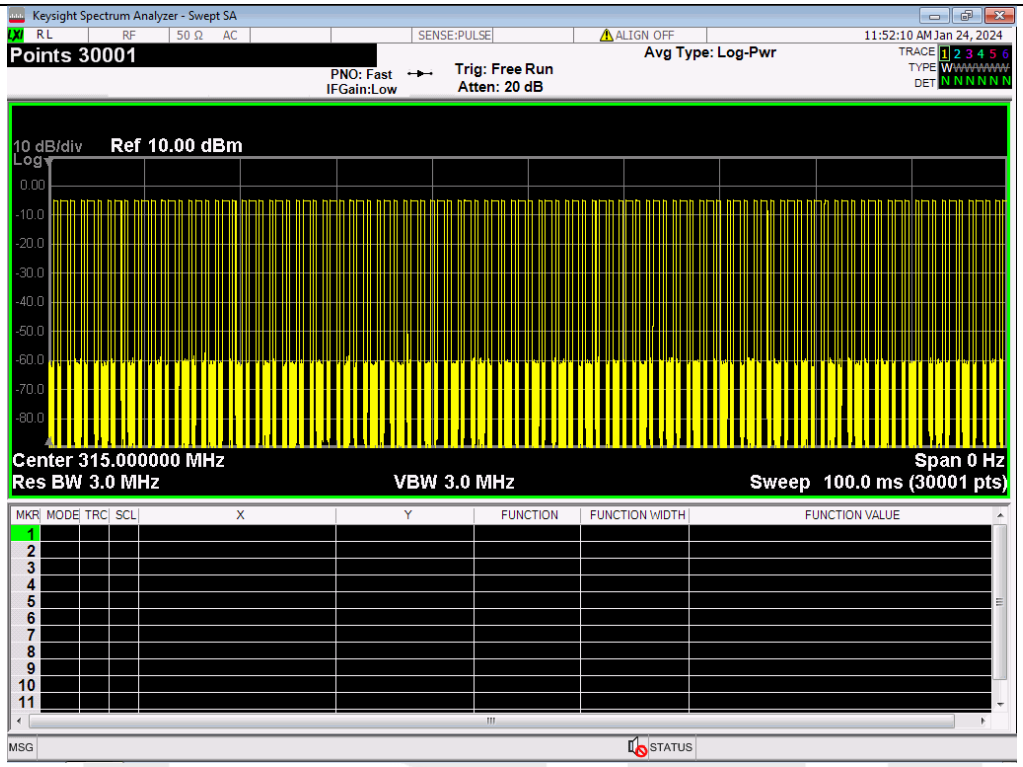
Test Mode	TX-315M-FSK
On time within 100 msec	100 ms
Duty Cycle Correct Factor (dB)	20*log(100/100)= 0

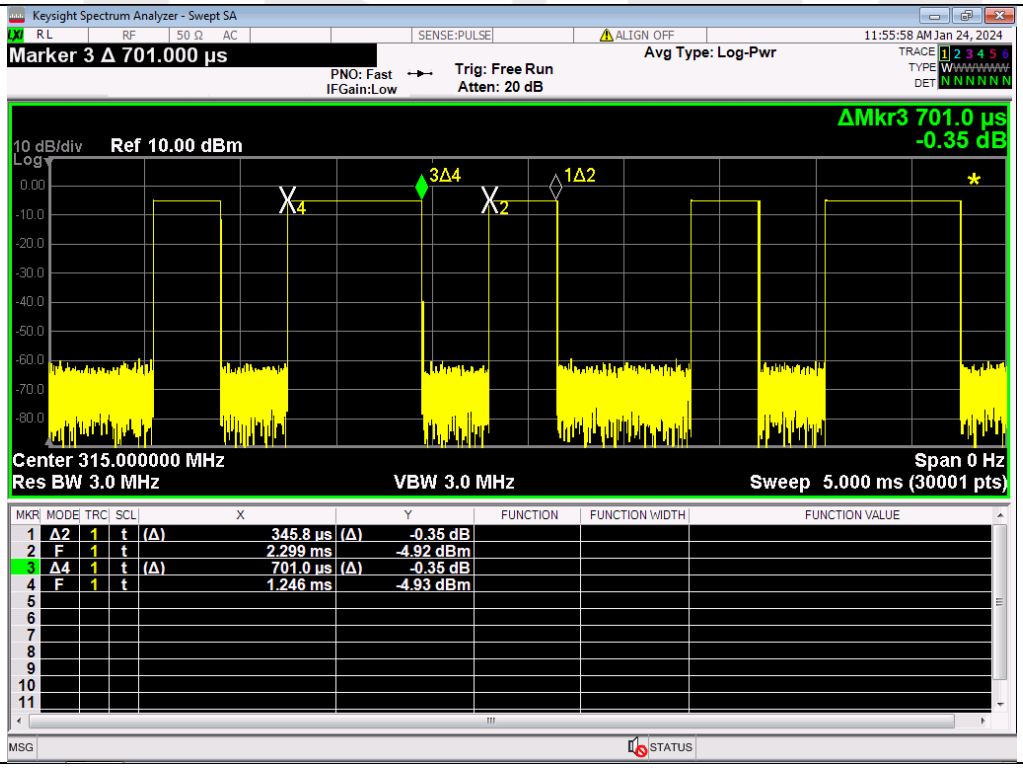
Test Mode	TX-433.92M-ASK
Long pulse duration	0.7018 ms
Number of long pulse	35
Short pulse duration	0.3482 ms
Number of short pulse	71
On time within 100 msec	0.7018*35+ 0.3482*71=49.2852 ms
Duty Cycle Correct Factor (dB)	20*log(49.2852/100)= -6.15

Test Mode	TX-433.92M-FSK
On time within 100 msec	100 ms
Duty Cycle Correct Factor (dB)	20*log(100/100)= 0

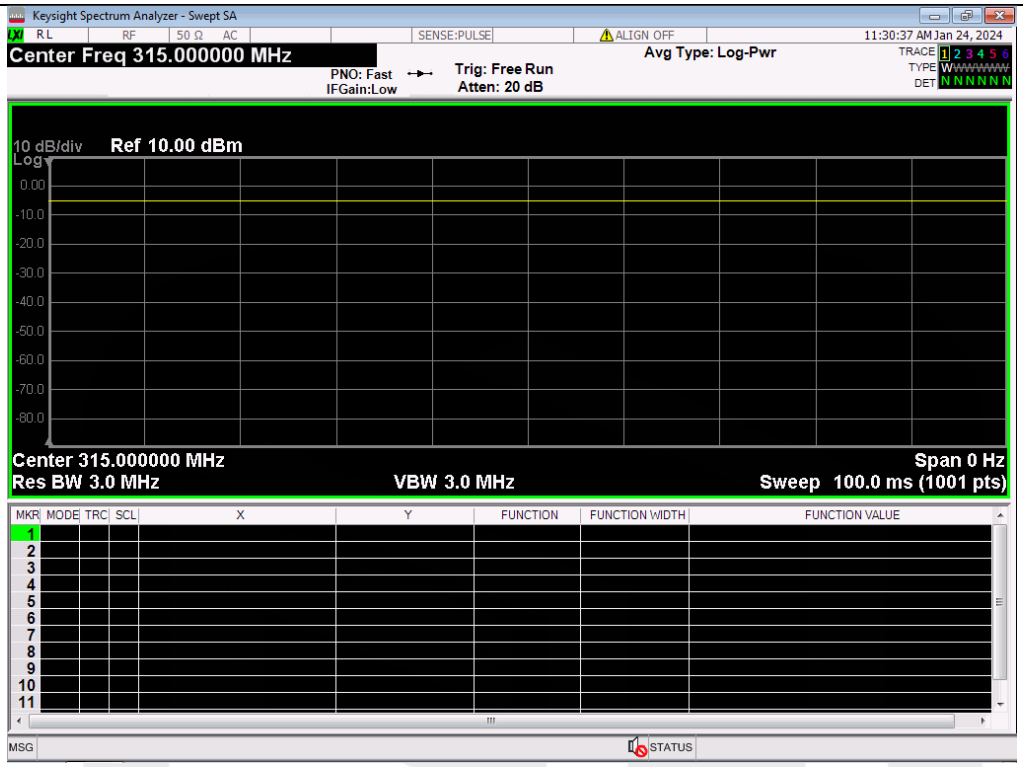
Note:

Duty Cycle Correct Factor (dB)=20log (Duty cycle) = 20*log(T_{pulse} /100)

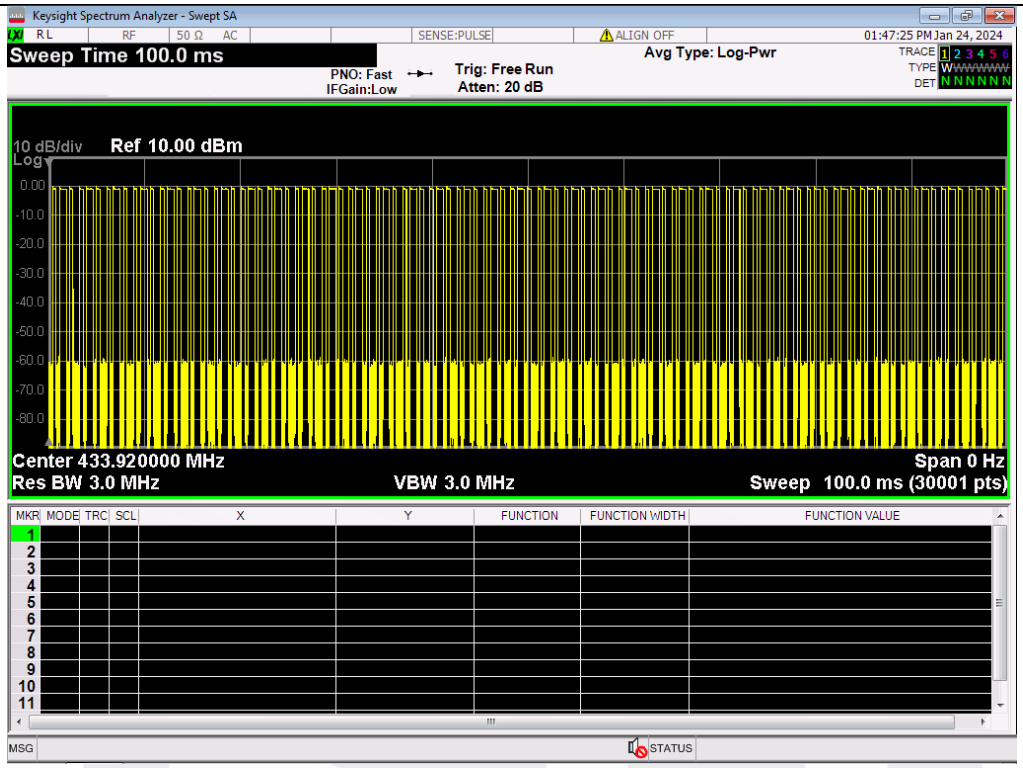
Test Plot-- TX-315M-ASK


Test Plot-- TX-315M-ASK


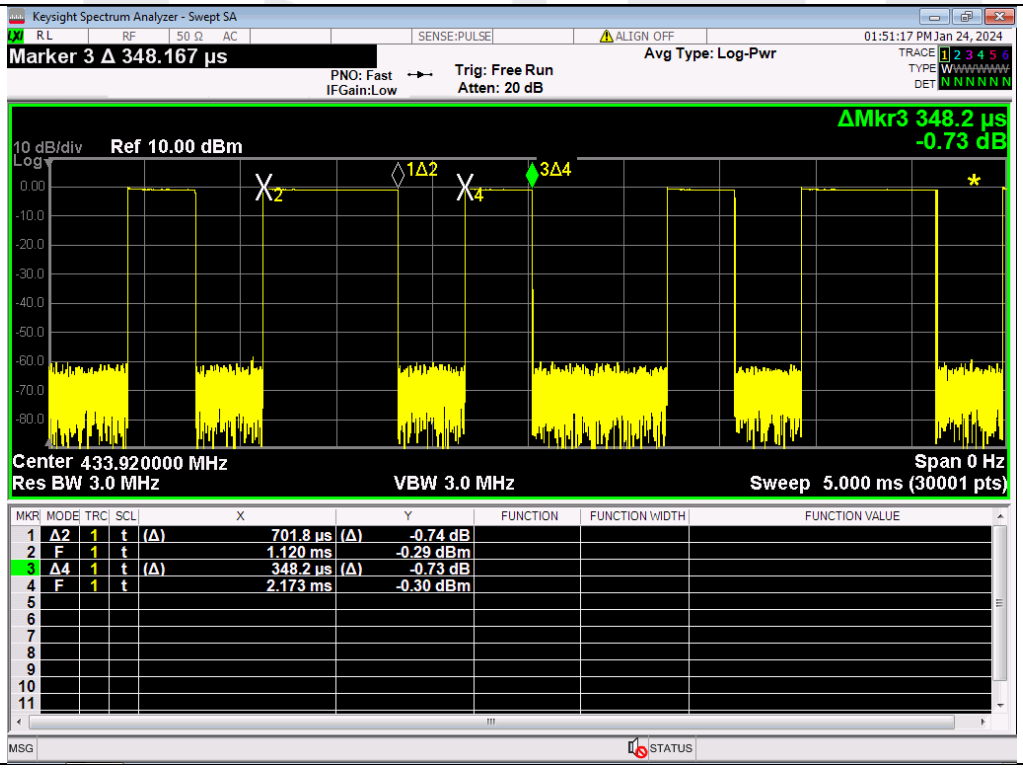
Test Plot-- TX-315M-FSK



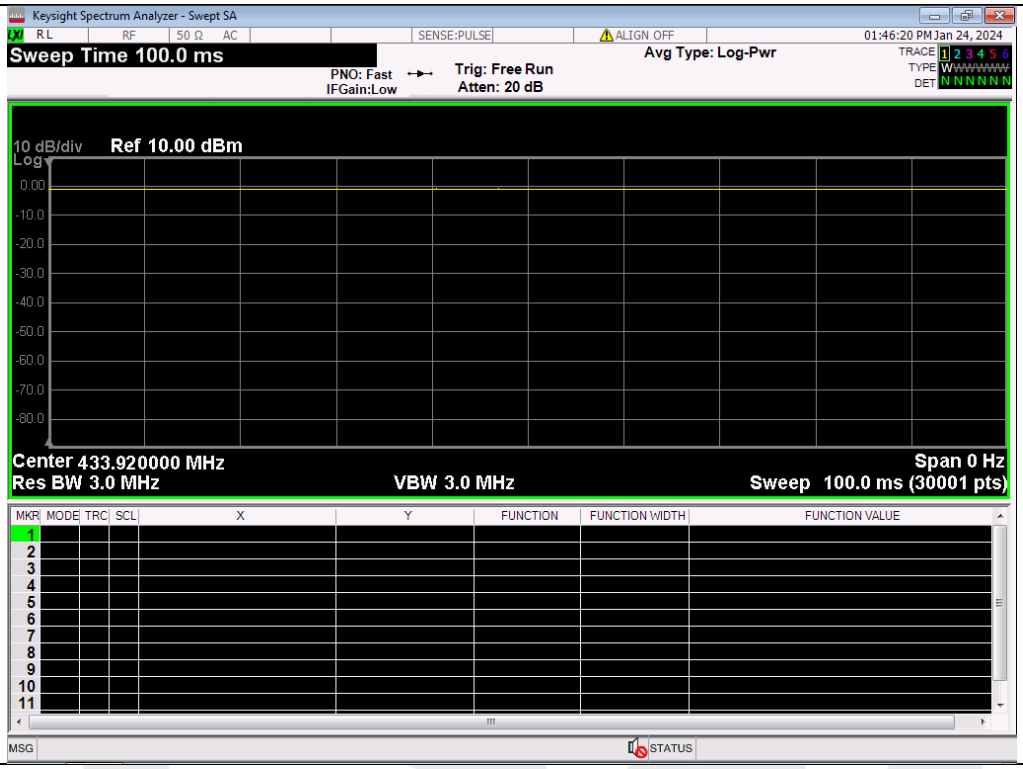
Test Plot-- TX-433.92M-ASK



Test Plot-- TX-433.92M-ASK



Test Plot-- TX-433.92M-FSK



5.6 Field Strength of Fundamental Emissions and Radiated Spurious Emission

5.6.1 Test Requirement

Test Requirement

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 (μV/m @ 3 m)	Field Strength of Spurious Emission (μV/m @ 3 m)
40.66 to 40.70	2250	225
70 to 130	1250	125
130 to 174	1250 to 3750*	125 to 375*
174 to 260	3750	375
260 to 470	3750 to 12500*	375 to 1250*
Above 470	12500	1250

** The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the bandedges.
for the band 260-470 MHz, μV/m at 3 meters = 41.6667(F) - 7083.3333.

Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table. based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed. the provisions in 15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of 15.205 shall be demonstrated using the measurement instrumentation specified in that section.

The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator Spurious emissions shall be attenuated o the average (or, alternatively. CISPR quasi-peak) limits shown in this table or to the general limits shown inS15.209, whichever limit permits a higher field strength.

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

Note:
1) Field Strength (dBμV/m) = 20*log[Field Strength (μV/m)].
2) In the emission tables above, the tighter limit applies at the band edges.
3) 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 20dB above the maximum permitted average limit.
4) For above 1000 MHz, limit field strength of harmonics:
54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

Test Method	ANSI C63.10-2020 section 6.6.4 Radiated emissions tests

5.6.2 Test Setup Diagram

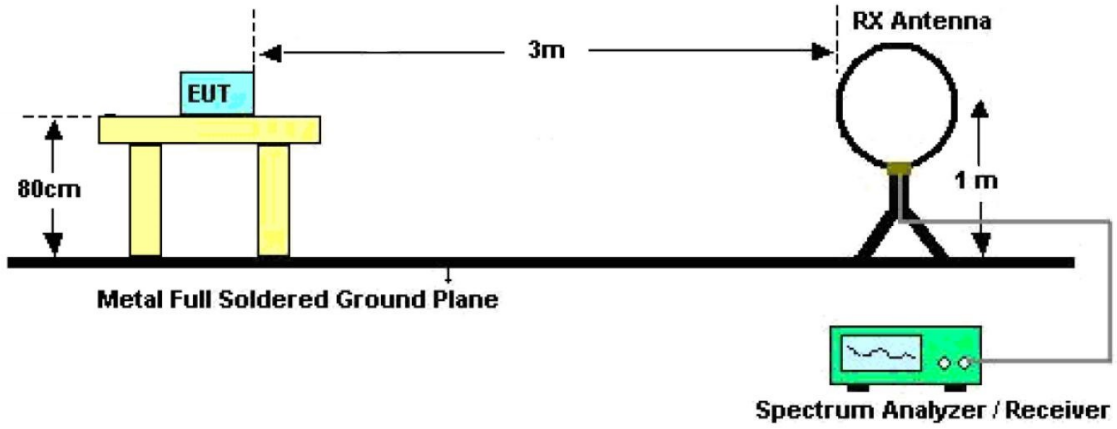


Figure 1. Below 30MHz

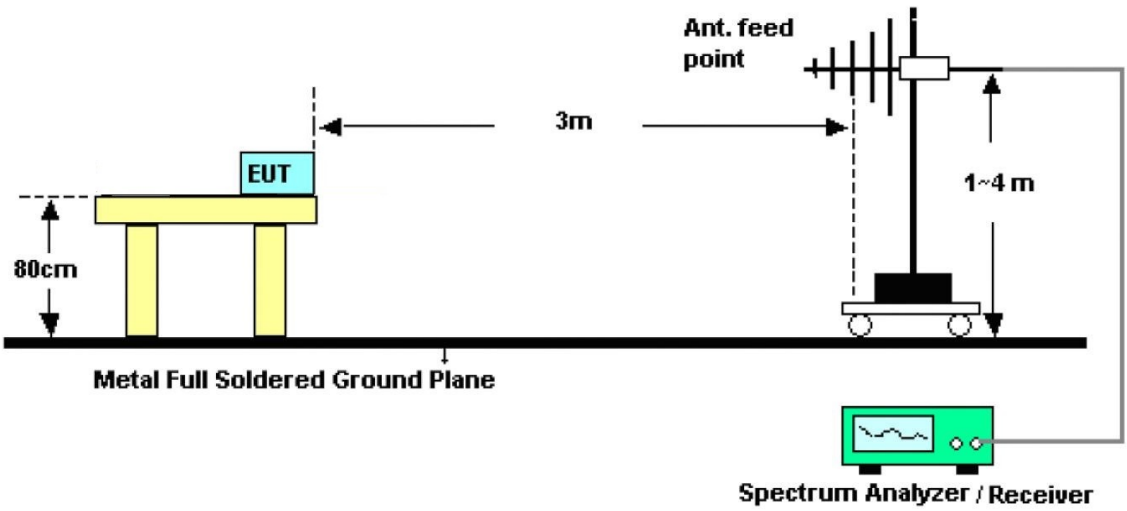


Figure 2. 30MHz to 1GHz

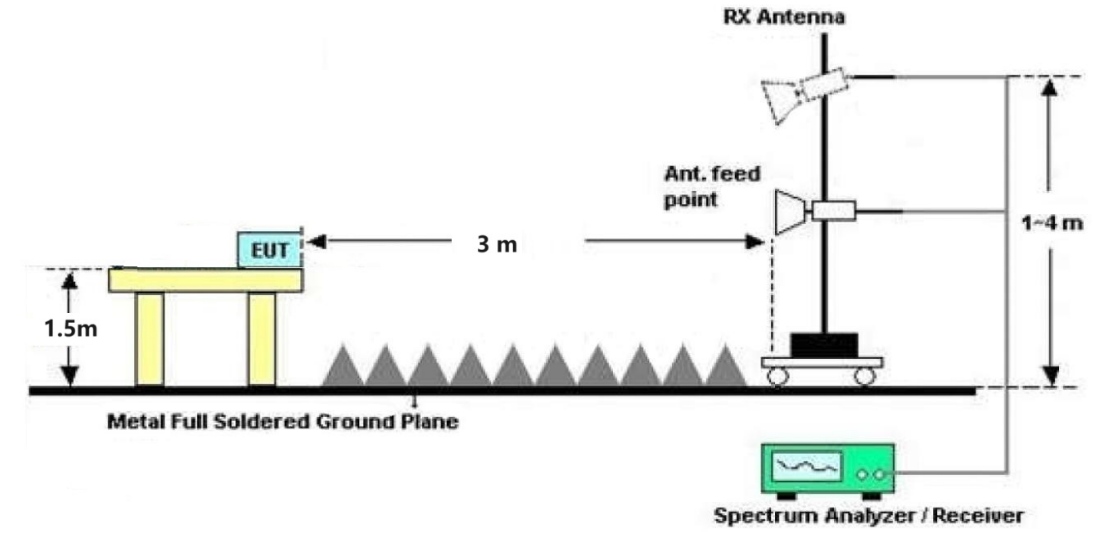


Figure 3. Above 1 GHz

5.6.3 Test Procedure

The measurement frequency range is from 9 kHz 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
For 9kHz to 150kHz, Set the spectrum analyzer as:
RBW = 200Hz, VBW =1kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:
RBW = 9KHz, VBW =30kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:
RBW = 100kHz, VBW =300kHz, Detector= Quasi-Peak, Trace mode= Max hold, Sweep- auto couple.

For above 1GHz,Set the spectrum analyzer as:
RBW =1MHz, VBW =1MHz, Detector= Peak, Trace mode= Max hold, Sweep- auto couple.
RBW =1MHz, VBW =10Hz, Detector= Average, Trace mode= Max hold, Sweep- auto couple.

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

5.6.4 Test Data

PASS.
The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

During the test, for 30MHz to 5000MHz, only the worst case is recorded in the report.

Fundamental and Harmonics Emissions and above 1G Test Data

Test Mode: TX-315M-ASK										
Pol.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Level (dBuV/m)	Duty Cycle Factor	Total Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type	Result
V	315.4808	77.84	-11.64	66.20	--	66.20	95.62	-29.42	PK	PASS
V	631.6884	41.34	-5.98	35.30	--	35.30	75.62	-40.32	PK	PASS
V	945.4399	33.07	-1.65	31.42	--	31.42	75.62	-44.20	PK	PASS
V	1260.0010	*			--	*	75.62	*	PK	PASS
V	1575.0050	*			--	*	75.62	*	PK	PASS
V	1889.9990	*			--	*	75.62	*	PK	PASS
H	315.4808	86.27	-11.67	74.60	--	74.60	95.62	-21.02	PK	PASS
H	631.6884	46.16	-6.05	40.11	--	40.11	75.62	-35.51	PK	PASS
H	945.4399	35.36	-1.43	33.93	--	33.93	75.62	-41.69	PK	PASS
H	1259.9990	*			--	*	75.62	*	PK	PASS
H	1575.0080	*			--	*	75.62	*	PK	PASS
H	1889.9980	*			--	*	75.62	*	PK	PASS
V	315.4808	77.84	-11.64	66.20	-6.18	60.02	75.62	-15.60	AV	PASS
V	631.6884	41.34	-5.98	35.30	-6.18	29.12	55.62	-26.50	AV	PASS
V	945.4399	33.07	-1.65	31.42	-6.18	25.24	55.62	-30.38	AV	PASS
V	1260.0010	*			-6.18	*	55.62	*	AV	PASS
V	1575.0050	*			-6.18	*	55.62	*	AV	PASS
V	1889.9990	*			-6.18	*	55.62	*	AV	PASS
H	315.4808	86.27	-11.67	74.60	-6.18	68.42	75.62	-7.20	AV	PASS
H	631.6884	46.16	-6.05	40.11	-6.18	33.93	55.62	-21.69	AV	PASS
H	945.4399	35.36	-1.43	33.93	-6.18	27.75	55.62	-27.87	AV	PASS
H	1259.9990	*			-6.18	*	55.62	*	AV	PASS
H	1575.0080	*			-6.18	*	55.62	*	AV	PASS
H	1889.9980	*			-6.18	*	55.62	*	AV	PASS

Remark:
1. Level= Reading +Factor, Total Level = Level +Duty Cycle Factor, Margin=Total Level – Limit.
2. For AV detector, Duty Cycle Factor data comes from clause 5.5 calculation.
3. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Fundamental and Harmonics Emissions and above 1G Test Data

Test Mode: TX-315M-FSK										
Pol.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Level (dBuV/m)	Duty Cycle Factor	Total Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type	Result
V	315.48	76.34	-11.64	64.70	--	64.70	95.62	-30.92	PK	PASS
V	631.69	48.98	-5.98	43.00	--	43.00	75.62	-32.62	PK	PASS
V	945.44	33.07	-1.65	31.42	--	31.42	75.62	-44.20	PK	PASS
V	1260.01	*			--	*	75.62	*	PK	PASS
V	1574.99	*			--	*	75.62	*	PK	PASS
V	1890.00	*			--	*	75.62	*	PK	PASS
H	315.48	86.29	-11.68	74.61	--	74.61	95.62	-21.01	PK	PASS
H	631.69	46.18	-6.07	40.11	--	40.11	75.62	-35.51	PK	PASS
H	945.44	35.34	-1.45	33.89	--	33.89	75.62	-41.73	PK	PASS
H	1260.00	*			--	*	75.62	*	PK	PASS
H	1575.01	*			--	*	75.62	*	PK	PASS
H	1890.01	*			--	*	75.62	*	PK	PASS
V	315.48	76.34	-11.64	64.70	0.00	64.70	75.62	-10.92	AV	PASS
V	631.69	48.98	-5.98	43.00	0.00	43.00	55.62	-12.62	AV	PASS
V	945.44	33.07	-1.65	31.42	0.00	31.42	55.62	-24.20	AV	PASS
V	1260.01	*			0.00	*	55.62	*	AV	PASS
V	1574.99	*			0.00	*	55.62	*	AV	PASS
V	1890.00	*			0.00	*	55.62	*	AV	PASS
H	315.48	86.29	-11.68	74.61	0.00	74.61	75.62	-1.01	AV	PASS
H	631.69	46.18	-6.07	40.11	0.00	40.11	55.62	-15.51	AV	PASS
H	945.44	35.34	-1.45	33.89	0.00	33.89	55.62	-21.73	AV	PASS
H	1260.00	*			0.00	*	55.62	*	AV	PASS
H	1575.01	*			0.00	*	55.62	*	AV	PASS
H	1890.01	*			0.00	*	55.62	*	AV	PASS

Remark:
1. Level= Reading +Factor, Total Level = Level +Duty Cycle Factor, Margin=Total Level – Limit.
2. For AV detector, Duty Cycle Factor data comes from clause 5.5 calculation.
3. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Fundamental and Harmonics Emissions and above 1G Test Data

Test Mode: TX-433.92M-ASK										
Pol.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Level (dBuV/m)	Duty Cycle Factor	Total Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type	Result
V	434.0651	78.47	-9.63	68.84	--	68.84	100.83	-31.99	PK	PASS
V	869.1302	47.97	-2.73	45.24	--	45.24	80.83	-35.59	PK	PASS
V	1301.7540	47.47	1.03	48.50	--	48.50	80.83	-32.33	PK	PASS
V	1735.6850	*			--	*	80.83	*	PK	PASS
V	2169.5910	*			--	*	80.83	*	PK	PASS
V	2603.5300	*			--	*	80.83	*	PK	PASS
H	434.0651	85.26	-9.63	75.66	--	75.66	100.83	-25.17	PK	PASS
H	869.1302	53.45	-2.53	50.92	--	50.92	80.83	-29.91	PK	PASS
H	1301.7630	51.30	1.03	52.33	--	52.33	80.83	-28.50	PK	PASS
H	1735.6870	*			--	*	80.83	*	PK	PASS
H	2169.5970	*			--	*	80.83	*	PK	PASS
H	2603.5200	*			--	*	80.83	*	PK	PASS
V	434.0651	78.47	-9.63	68.84	-6.15	62.69	80.83	-18.14	AV	PASS
V	869.1302	47.97	-2.73	45.24	-6.15	39.09	60.83	-21.74	AV	PASS
V	1301.7540	47.47	1.03	48.50	-6.15	42.35	60.83	-18.48	AV	PASS
V	1735.6850	*			-6.15	*	60.83	*	AV	PASS
V	2169.5910	*			-6.15	*	60.83	*	AV	PASS
V	2603.5300	*			-6.15	*	60.83	*	AV	PASS
H	434.0651	85.26	-9.63	75.66	-6.15	69.51	80.83	-11.32	AV	PASS
H	869.1302	53.45	-2.53	50.92	-6.15	44.77	60.83	-16.06	AV	PASS
H	1301.7630	51.30	1.03	52.33	-6.15	46.18	60.83	-14.65	AV	PASS
H	1735.6870	*			-6.15	*	60.83	*	AV	PASS
H	2169.5970	*			-6.15	*	60.83	*	AV	PASS
H	2603.5200	*			-6.15	*	60.83	*	AV	PASS

Remark:
1. Level= Reading +Factor, Total Level = Level +Duty Cycle Factor, Margin=Total Level – Limit.
2. For AV detector, Duty Cycle Factor data comes from clause 5.5 calculation.
3. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

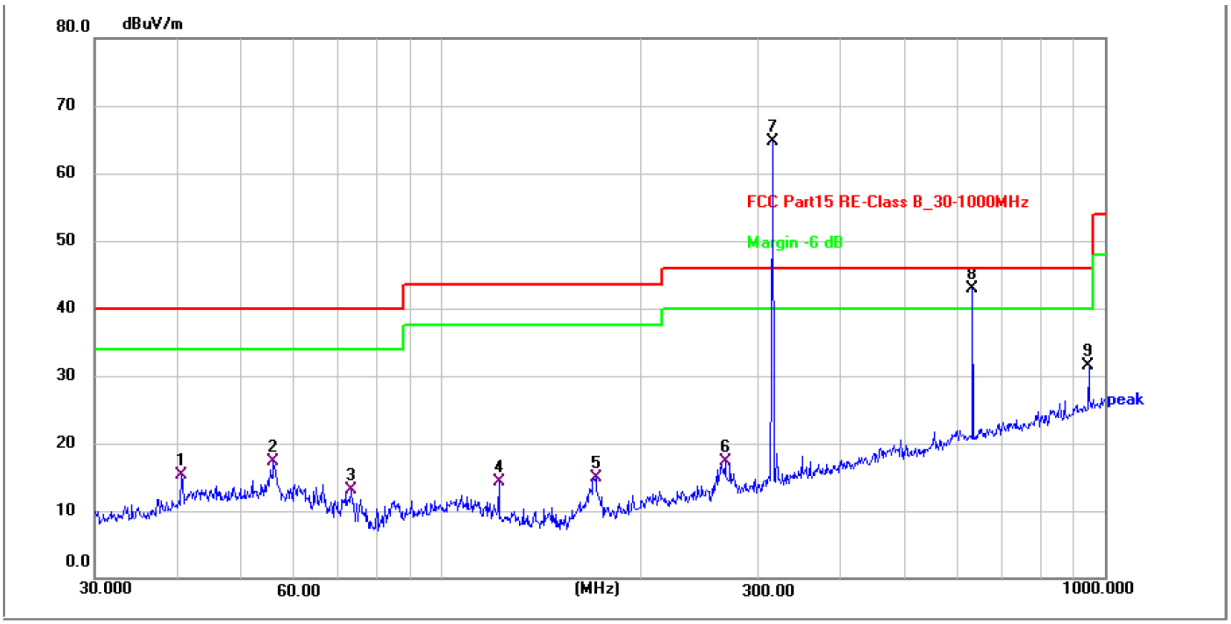
Fundamental and Harmonics Emissions and above 1G Test Data

Test Mode: TX-433.92M -FSK										
Pol.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB/m)	Level (dBuV/m)	Duty Cycle Factor	Total Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type	Result
V	434.0651	84.98	-9.63	75.35	--	75.35	100.83	-25.48	PK	PASS
V	869.1302	45.70	-2.73	42.97	--	42.97	80.83	-37.86	PK	PASS
V	1301.7690	47.47	1.03	48.50	--	49.17	80.83	-31.66	PK	PASS
V	1735.6890	*			--	*	80.83	*	PK	PASS
V	2169.5980	*			--	*	80.83	*	PK	PASS
V	2603.5200	*			--	*	80.83	*	PK	PASS
H	434.0651	85.96	-9.63	76.33	--	76.33	100.83	-24.50	PK	PASS
H	869.1302	51.42	-2.53	48.89	--	48.89	80.83	-31.94	PK	PASS
H	1301.7700	52.19	1.04	53.23	--	53.23	80.83	-27.60	PK	PASS
H	1735.6720	*			--	*	80.83	*	PK	PASS
H	2169.6050	*			--	*	80.83	*	PK	PASS
H	2603.5290	*			--	*	80.83	*	PK	PASS
V	434.0651	84.98	-9.63	75.35	0.00	75.35	80.83	-5.48	AV	PASS
V	869.1302	45.70	-2.73	42.97	0.00	42.97	60.83	-17.86	AV	PASS
V	1301.7690	47.47	1.03	48.50	0.00	48.50	60.83	-12.33	AV	PASS
V	1735.6890	*			0.00	*	60.83	*	AV	PASS
V	2169.5980	*			0.00	*	60.83	*	AV	PASS
V	2603.5200	*			0.00	*	60.83	*	AV	PASS
H	434.0651	85.96	-9.63	76.33	0.00	76.33	80.83	-4.50	AV	PASS
H	869.1302	51.42	-2.53	48.89	0.00	48.89	60.83	-11.94	AV	PASS
H	1301.7700	52.19	1.04	53.23	0.00	53.23	60.83	-7.60	AV	PASS
H	1735.6720	*			0.00	*	60.83	*	AV	PASS
H	2169.6050	*			0.00	*	60.83	*	AV	PASS
H	2603.5290	*			0.00	*	60.83	*	AV	PASS

Remark:
1. Level= Reading +Factor, Total Level = Level +Duty Cycle Factor, Margin=Total Level – Limit.
2. For AV detector, Duty Cycle Factor data comes from clause 5.5 calculation.
3. “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Radiated Emission Test Data (30-1000MHz)

Test Site:	**966 Chamber #1**	**Polarization:**	**Vertical**
Distance:	**3m**	**Test Mode:**	**TM2**

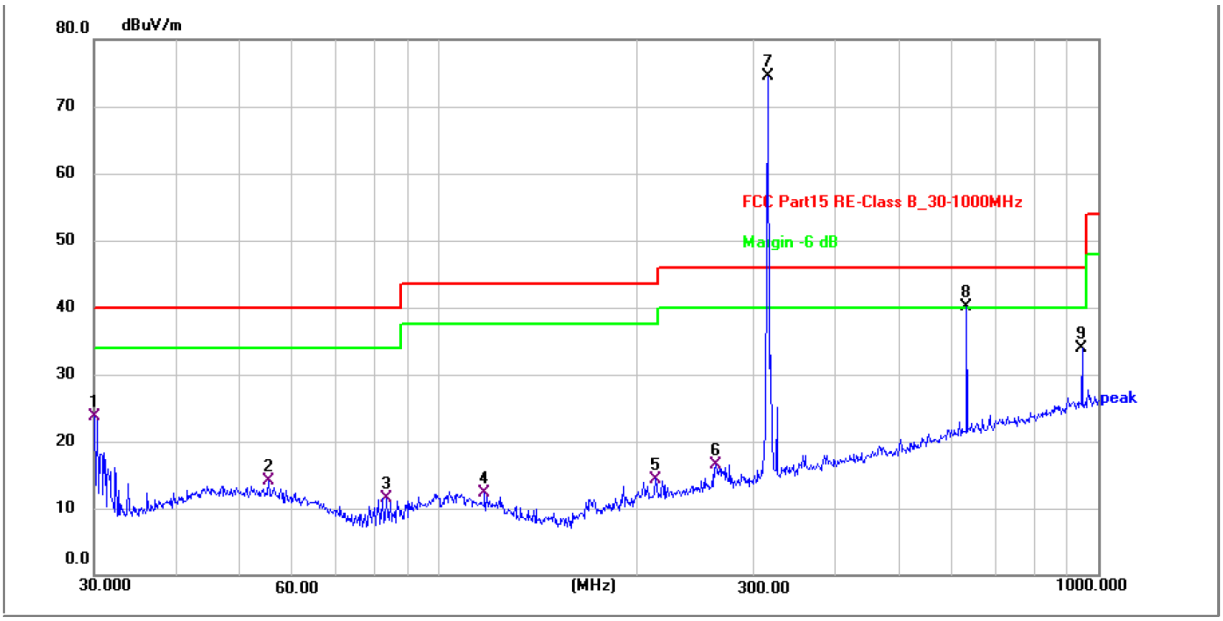


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	40.5591	30.34	-15.06	15.28	40.00	-24.72	QP	P	
2	55.8047	31.86	-14.60	17.26	40.00	-22.74	QP	P	
3	73.1025	31.72	-18.61	13.11	40.00	-26.89	QP	P	
4	121.9755	31.07	-16.68	14.39	43.50	-29.11	QP	P	
5	170.7926	31.81	-16.93	14.88	43.50	-28.62	QP	P	
6	267.5455	30.11	-12.88	17.23	46.00	-28.77	QP	P	
7 *	315.4808	76.34	-11.64	64.70	--	--	peak		
8 !	631.6884	48.98	-5.98	43.00	--	--	peak		
9	945.4399	33.07	-1.65	31.42	--	--	peak		

Note: Level = Reading + Factor Margin = Level - Limit

Radiated Emission Test Data (30-1000MHz)

Test Site:	**966 Chamber #1**	**Polarization:**	**Horizontal**
Distance:	**3m**	**Test Mode:**	**TM2**

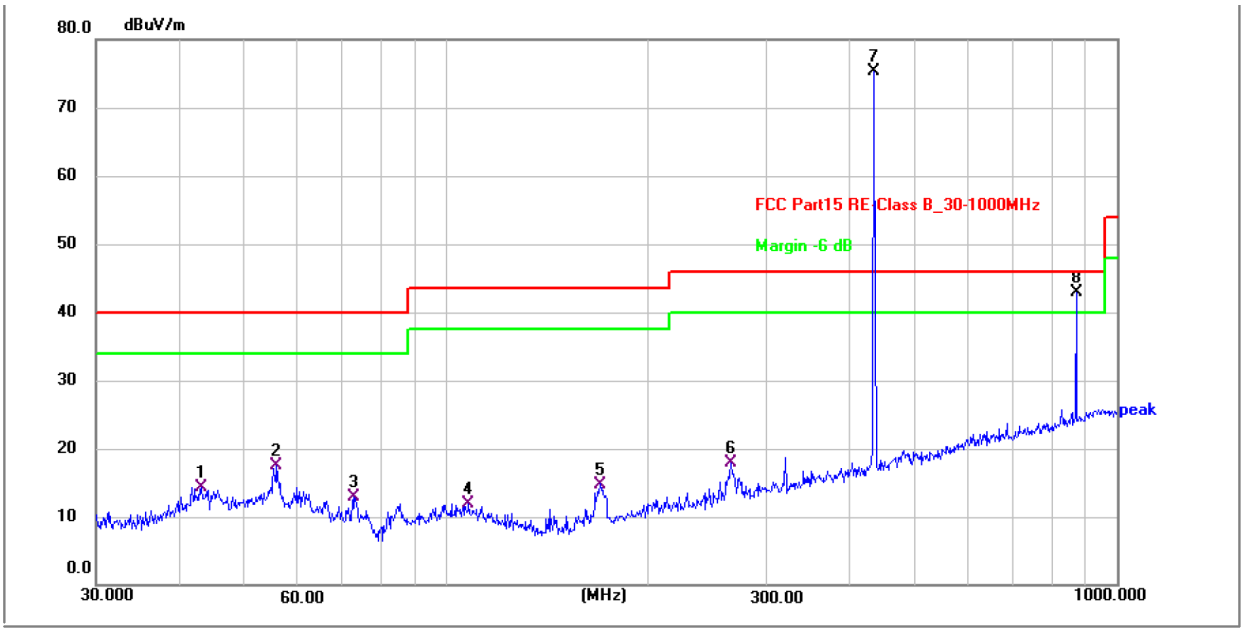


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	30.1054	40.75	-16.98	23.77	40.00	-16.23	QP	P	
2	55.2207	28.56	-14.49	14.07	40.00	-25.93	QP	P	
3	83.2298	30.47	-18.92	11.55	40.00	-28.45	QP	P	
4	117.3603	28.62	-16.40	12.22	43.50	-31.28	QP	P	
5	213.0151	28.83	-14.43	14.40	43.50	-29.10	QP	P	
6	262.8955	29.46	-12.90	16.56	46.00	-29.44	QP	P	
7 *	315.4808	86.27	-11.67	74.60	--	--	peak		
8 !	631.6884	46.16	-6.05	40.11	--	--	peak		
9	945.4399	35.36	-1.43	33.93	--	--	peak		

Note: Level = Reading + Factor Margin = Level - Limit

Radiated Emission Test Data (30-1000MHz)

Test Site:	**966 Chamber #1**	**Polarization:**	**Vertical**
Distance:	**3m**	**Test Mode:**	**TM4**

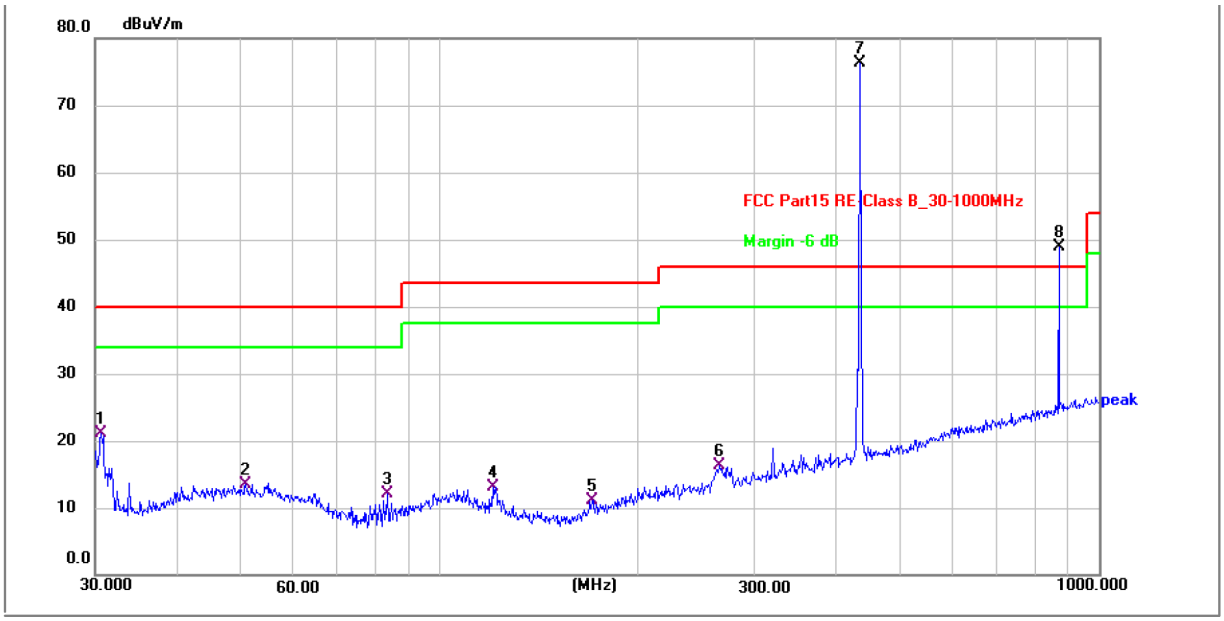


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	43.0505	28.83	-14.58	14.25	40.00	-25.75	QP	P	
2	55.8047	32.03	-14.60	17.43	40.00	-22.57	QP	P	
3	72.8466	31.47	-18.56	12.91	40.00	-27.09	QP	P	
4	107.8877	27.65	-15.83	11.82	43.50	-31.68	QP	P	
5	169.5990	31.81	-17.01	14.80	43.50	-28.70	QP	P	
6	265.6757	30.75	-12.93	17.82	46.00	-28.18	QP	P	
7 *	434.0651	84.98	-9.63	75.35	--	--	peak		
8 !	869.1302	45.70	-2.73	42.97	--	--	peak		

Note: Level = Reading + Factor Margin = Level - Limit

Radiated Emission Test Data (30-1000MHz)

Test Site:	**966 Chamber #1**	**Polarization:**	**Horizontal**
Distance:	**3m**	**Test Mode:**	**TM4**



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	30.6379	37.97	-16.96	21.01	40.00	-18.99	QP	P	
2	50.7637	27.71	-14.17	13.54	40.00	-26.46	QP	P	
3	83.2298	30.96	-18.92	12.04	40.00	-27.96	QP	P	
4	120.2766	29.78	-16.58	13.20	43.50	-30.30	QP	P	
5	170.1948	28.07	-16.97	11.10	43.50	-32.40	QP	P	
6	265.6757	29.05	-12.83	16.22	46.00	-29.78	QP	P	
7 *	434.0651	85.96	-9.63	76.33	--	--	peak		
8 X	869.1302	51.42	-2.53	48.89	--	--	peak		

Note: Level = Reading + Factor Margin = Level - Limit

ANNEX A TEST SETUP PHOTOS

Please refer to the document “8225EU011703W-AA.PDF”

ANNEX B EXTERNAL PHOTOS

Please refer to the document “8225EU011703W-AB.PDF”

ANNEX C INTERNAL PHOTOS

Please refer to the document “8225EU011703W-AC.PDF”

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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.
3. For the report with CNAS mark or A2LA mark, the items marked with "☆" are not within the accredited scope.
4. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the “inspection and testing dedicated stamp” or test report stamp.
5. The test data and results are only valid for the tested samples provided by the customer.
6. This report shall not be partially reproduced without the written permission of the laboratory.
7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--- End of Report ---

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