CTB



TEST REPORT

Product Name: Ford Smart Remote 902 FCC ID: 2BNXJ-SMT-FOR01 Trademark: GTL SMT-FOR-014, SMT-FOR-012, SMT-FOR-013, SMT-FOR-014, SMT-FOR-016, Model Number: SMT-FOR-017 Prepared For: Genesis Tecspro Ltd Building 15, 16, Zhongnan High-tech Electronic Information Industrial Park, Address: Chenjiang Street, Huicheng District, Huizhou City, Guangdong Province Manufacturer: Genesis Tecspro Ltd Building 15, 16, Zhongnan High-tech Electronic Information Industrial Park, Address: Chenjiang Street, Huicheng District, Huizhou City, Guangdong Province Prepared By: Shenzhen CTB Testing Technology Co., Ltd. 1&2/F., Building A, No.26, Xinhe Road, Xingiao, Xingiao Street, Bao'an District, Address: Shenzhen, Guangdong, China Sample Received Date: Apr. 07, 2025 Sample tested Date: Apr. 07, 2025 to May. 07, 2025 Issue Date: May. 07, 2025 CTB25040702507RF01 Report No .: FCC CFR Title 47 Part 15 Subpart C Section 15.249 **Test Standards** ANSI C63.10:2013 Test Results PASS Remark: This is 900MHz radio test report. Compiled by: Approved by: Reviewed by:

Zhou Kuj

Arron 2iu

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Arron Liu

Bin Mei / Director

Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.



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(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
CTB25040702507RF01	May. 07, 2025	Original	Valid



2. TEST SUMMARY

The Product has been tested according to the following specifications:

	ndard ection	Test Item	Judgment	Remark
1	5.207	Conducted Emission	N/A	A 6
C C 1	5.215	20dB Bandwidth	PASS	C C
د ^{ر ک} در ⁵ ا	5.249	Fundamental &Radiated Spurious Emission Measurement	PASS	CAR CA
1	5.205	Band Edge Emission	PASS	4
C C 1	5.203	Antenna Requirement	PASS	C' C'

Remark:

Test according to ANSI C63.10-2013.



3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product 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.

Uncertainty
54.3kHz
0.9dB
0.9dB
0.9dB
2.0dB
2.0dB
4.8dB
4.6dB
5.1dB
3.4dB
5.5%
0.63℃ C C C
1×10-7
3.2 dB
4.8 dB
4.9 dB



4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	SMT-FOR-014, SMT-FOR-012, SMT-FOR-013, SMT-FOR-014, SMT-FOR-016, SMT-FOR-017
Model Description:	All the model are the same circuit and RF module, only the model name and appearance are different. Test sample model: SMT-FOR-014
Hardware Version:	V1.0
Software Version:	V1.0 V1.0 V1.0 V1.0 V1.0 V1.0 V1.0 V1.0
Operation Frequency:	902MHz
Type of Modulation:	ASK
Antenna installation:	PCB antenna
Antenna Gain:	1.0dBi
Ratings:	DC 3V by battery

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

ç	Item	Equipment Mfr/Brand		Model/Type No.	Series No.	Note
Ş		~ 1 ~			<u>~</u>	<u> </u>

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

8	CH No.	Frequency (MHz)
_	1.	902



4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

	Test mode	Low channel	Middle channel	High channel
C.S.	Transmitting (ASK)	ເກັເກັດ	902MHz	cr of c

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	
Normal Voltage(DC):	3V
Normal Temperature(°C)	23
Low Temperature(°C)	
High Temperature(°C)	40



5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1&2F., Building A, No. 26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: CN1276

5.2 Test Instrument Used

No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Calibrated unti
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	A.14.16	2025/6/28
2	Power Sensor	Agilent	U2021XA	MY56120032		2025/6/28
3	Power Sensor	Agilent	U2021XA	MY56120034		2025/6/28
4	Communication test set	R&S	CMW500	108058	V3.5.80	2025/6/28
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/6/28
6	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2025/6/28
7	Vector signal generator	Agilent	N5182A	MY47420195	A.01.87	2025/6/28
8	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/6/28
9	2.4 GHz Filter	Shenxiang	MSF2400-24 83.5MS-1154	20181015001		2025/6/30
10	5 GHz Filter	Shenxiang	MSF5150-58 50MS-1155	20181015001		2025/6/30
11	Filter	Xingbo	XBLBQ-DZA 120	190821-1-1	P of P of	2025/6/30
12	BT&WI-FI Automatic test software	Micowave	MTS8310	Ver. 2.0.0.0	* sp s	57 59
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	\$ 1 × 1	2025/6/28
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	~~ \~	2025/6/28
15	234G Automatic test software	Micowave	MTS8200	Ver. 2.0.0.0		c , c
16	966 chamber	C.R.T.	966	1		2027/6/21
17	Receiver	R&S	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/6/28
18	Amplifier	HP	8447E	2945A02747		2025/6/28
19	Amplifier	Agilent	8449B	3008A01838		2025/6/28
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869		2025/6/28



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gy Co., Ltd. Report No.: CTB25040702507RF01

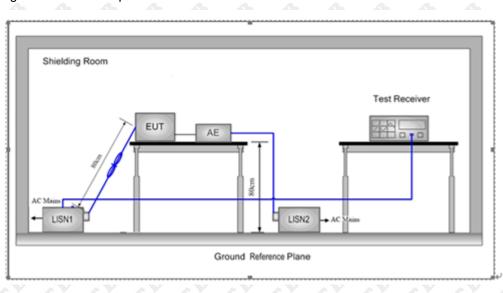
21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	* ~ ~ ~ ~	2025/6/28
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE		
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224		2025/6/28
24	loop antenna	ZHINAN	ZN30900A	GTS534		
25	40G Horn antenna	A/H/System	SAS-574	588		2025/6/28
26	Amplifier	AEROFLEX	Aeroflex	097		2025/6/28
27	Power Metter	KEYSIGHT	N1912AP	N/A	A.05.00	2025/6/28

		Radiated	d emission(No.	2 Chamber)		
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until
1	966 Chamber	C/ R/ T	966	67 6	676	2026/11/14
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	8 59 58	2026/7/07
3	Broadband Antenna	Schwarzbeck	VULB 9168	1471	\$ 6 8	2025/7/06
4	Amplifier	Agilent	8449B	3008A01838		2025/6/30
5	Preamplifier	Schwarzbeck	BBV 9743 B	00500	\$ \$ \$	2025/5/23
6	EMI TEST RECEIVER	R&S	ESCI7	100861	6,6	2025/10/25
7	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/6/28
8	EMI test software	Farad	EZ-EMC		Ver. FARAD-3A1+	\$' \$
9	Coaxial cable	Rosenberg	8m	616	010	2025/10/25
10	Coaxial cable	Times	2m			2025/10/25
11	Coaxial cable	Times	2m 0	670	0,0	2025/10/25
12	Coaxial cable	Times	1m		S SP SS	2025/10/25
13	loop antenna	Schwarzbeck	FMZB 1519B	1519B-224		2025/6/29
14	Communication test set	R&S	CMW500	108058	B.19.07 (E1962B)	2025/6/28
15	Communication test set	Agilent	E5515C	MY50102567	V3.5.80	2025/6/28



6. AC POWER LINE CONDUCTED EMISSION

6.1 Block Diagram Of Test Setup



6.2 Limit

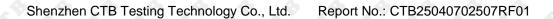
Table 4 – AC power-line conducted emissions limits				
Frequency (MHz) Conducted limit (dBµV)				
	Quasi-peak	Average		
0.15 - 0.5	66 to 56 ^{Note 1}	56 to 46 ^{Note 1}		
0.5 – 5	56	46		
5 - 30	60	50		

Note 1: The level decreases linearly with the logarithm of the frequency.

* Decreasing linearly with the logarithm of the frequency

6.3 Test procedure

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu$ H + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under



test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.

- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
- 6) All modes were tested at AC 120V and 240V, only the worst result of AC 120V 60Hz was reported.
- 7) If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.

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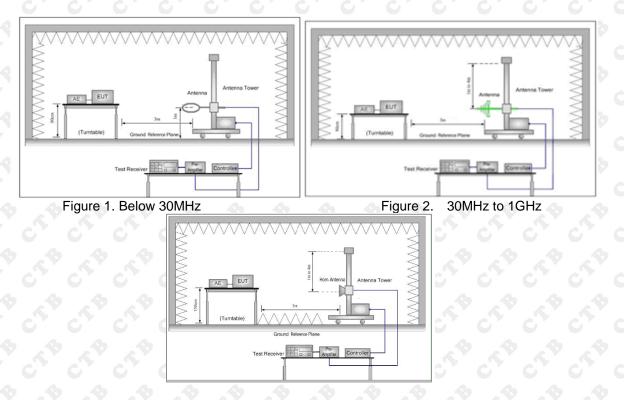
6.4 Test Result

N/A NOTE: This EUT is powered by DC power only, this test item is not applicable.



7. RADIATED SPURIOUS EMISSION

7.1 Block Diagram Of Test Setup



7.2 Limit

Spurious Emissions:

Frequency	Field strength (microvolt/meter)	Limit (dBµV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	0-0	0.0	300
0.490MHz-1.705MHz	24000/F(kHz)		\$ <u>.</u> \$	30
1.705MHz-30MHz	30	0-0	<u>' c' c</u>	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	• 3•
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.



7.3 Test procedure

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table 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.

Above 1GHz test procedure as below:

g.Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter). h.Test the EUT in the lowest channel ,the middle channel ,the Highest channel

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

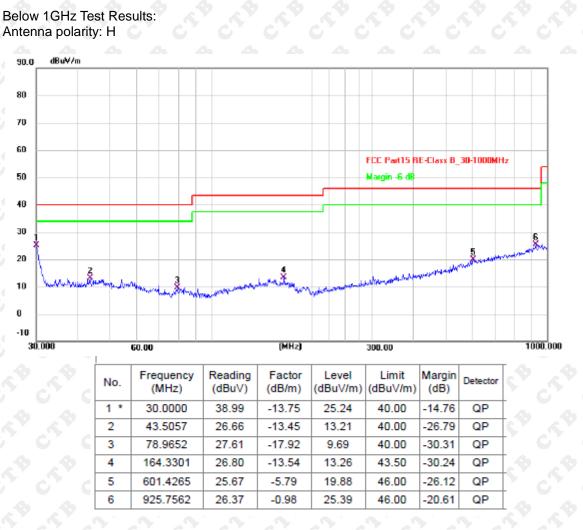
j. Full battery is usedduring test

Receiver set:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30KHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30KHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30KHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30KHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30KHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120 kHz	300KHz	Quasi-peak
	Peak	1MHz	3MHz	Peak
Above 1GHz	Peak	1MHz	10Hz	Average



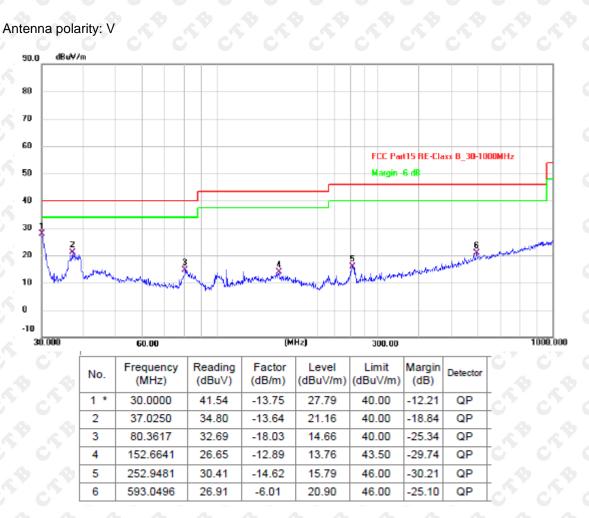
7.4 Test Result



Remark: 1. Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement - Limit

2. The margin of 9K-30MH measurement exceeds 20dB, so the test chart is not included.





Remark: 1. Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Measurement - Limit

2. The margin of 9K-30MH measurement exceeds 20dB, so the test chart is not included.



Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
2				6 6	0 0		6 6
V	1804	59.89	-3.57	56.32	74	-17.68	Pk
V	1804	48.39	-3.57	44.82	54	-9.18	AV
V	2706	58.45	-3.84	54.61	O 74 O	-19.39	Pk O
V	2706	48.20	-3.84	44.36	54	-9.64	AV
V	3608	58.09	-4.59	53.50	74	-20.50	Pk
V	3608	48.58	-4.59	43.99	54	-10.01	AV
H	1804	61.66	-3.62	58.04	74	-15.96	Pk
ЭΉС	1804	49.26	-3.62	45.64	54 0	-8.36	O AV O
H	2706	61.79	-3.93	57.86	74	-16.14	Pk
H	2706	50.56	-3.93	46.63	54	-7.37	AV
Н	3608	60.23	-3.57	56.66	74	-17.34	Pk
H	3608	48.15	-3.57	44.58	54	-9.42	AV

Above 1 GHz Test Results:

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Limit- Absolute Level Other harmonics emissions are lower than 20dB below the allowable limit.



8. BAND EDGE AND RF COUNDUCTED SPURIOUS EMISSIONS

8.1 Block Diagram Of Test Setup

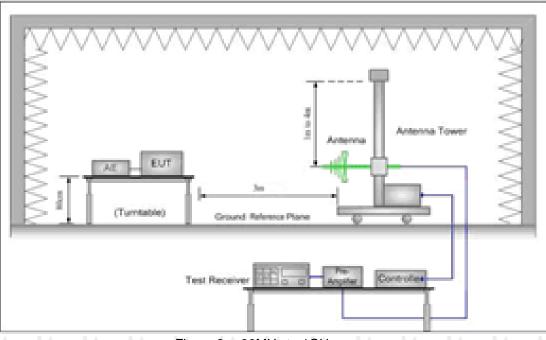


Figure 2. 30MHz to 1GHz

8.2 Limit

Spurious Emissions:

Frequency	Field strength (microvolt/meter)	Limit (dBµV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	0.0	0.0	300
0.490MHz-1.705MHz	24000/F(kHz)		\$ <u>,</u> \$	30
1.705MHz-30MHz	30	0-0	<u>' c' c</u>	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.



8.3 Test procedure

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.

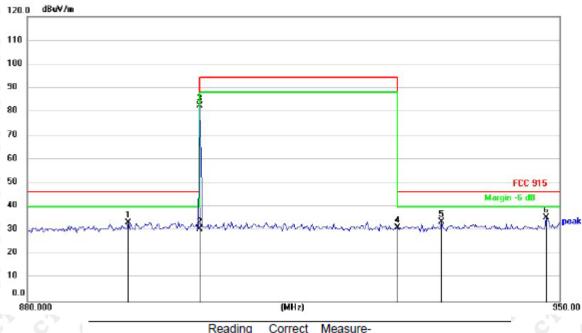
e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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.

Frequency	Detector	RBW	VBW	Remark
880MHz-950MHz	Quasi-peak	120 kHz	300KHz	Quasi-peak



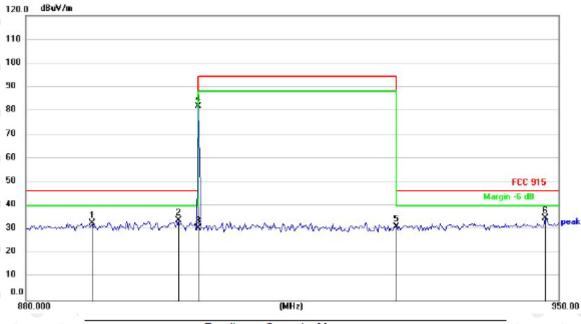
8.4 Test Result



902MHz Horizontal

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		892.8910	25.22	8.20	33.42	46.00	-12.58	QP
2		902.0000	22.50	8.27	30.77	46.00	-15.23	QP
3		902.1650	73.99	8.28	82.27	94.00	-11.73	peak
4		928.0000	22.91	8.46	31.37	46.00	-14.63	QP
5		933.9583	25.16	8.50	33.66	46.00	-12.34	QP
6	*	948.1839	26.87	8.60	35.47	46.00	-10.53	QP



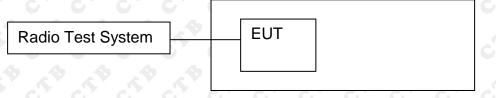


902MHz Vertical

No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		888.4598	24.58	8.16	32.74	46.00	-13.26	QP
2		899.4072	25.76	8.25	34.01	46.00	-11.99	QP
3		902.0000	22.50	8.27	30.77	46.00	-15.23	QP
4		902.1650	73.49	8.28	81.77	94.00	-12.23	peak
5		928.0000	22.91	8.46	31.37	46.00	-14.63	QP
6	*	948.1839	26.37	8.60	34.97	46.00	-11.03	QP



- 9. BANDWIDTH TEST
- 9.1 Block Diagram Of Test Setup



9.2 Limit

FCC Part15 (15.249), Subpart C					
Section	Test Item	Frequency Range (MHz)	Result		
15.249	Bandwidth	902~928	PASS		

- 9.3 Test procedure
- 1. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
- 2. Set the video bandwidth (VBW) \ge 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

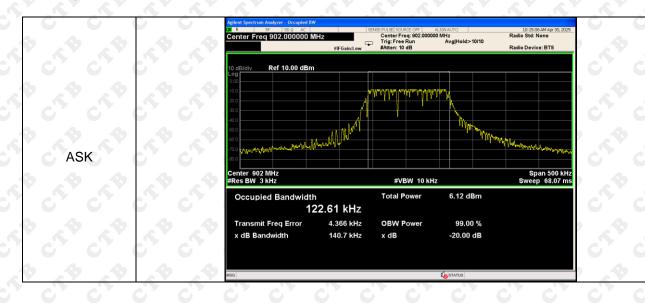
9.4 Test Result

Test Mode	Frequency (MHz)	20dB Bandwidth (MHz)	Result	
ASK	902	0.1407	PASS	

Note: All modes of operation were Pre-scan and the worst-case emissions are reported.



Test Graph:





10. ANTENNA REQUIREMENT

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. 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

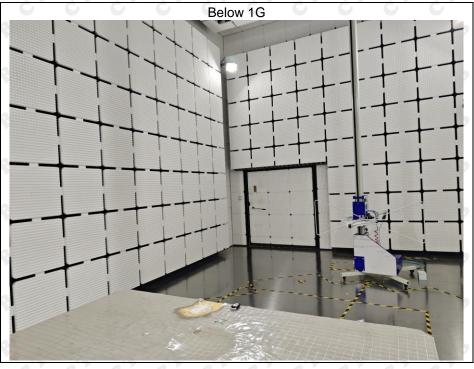
EUT Antenna:

The antenna is PCB antenna. The best case gain of the antenna is 1.0dBi.



11. EUT TEST SETUP PHOTOGRAPHS







******** END OF REPORT *******