

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240300077901 Page: 1 of 28

TEST REPORT

Application No.:	SZCR2403000779AT
Applicant:	LHE INC
Address of Applicant:	1680 Roberts Blvd. NW, Suite 404, Kennesaw, GA 30144, USA
Manufacturer:	DF Electronics Technology Limited
Address of Manufacturer:	Flat G, 6/F., Block 6, Whampoa Garden Site 11, Hong Kong
Equipment Under Test (EUT):
EUT Name:	ERA-PBTX Push Button
Model No.:	ERA-PBTX
Trade Mark:	SAFEGUARD, SUPPLY
FCC ID:	2ATHHERA-PBTX-B
Standard(s) :	47 CFR Part 15, Subpart C 15.231
Date of Receipt:	2024-03-07
Date of Test:	2024-03-12 to 2024-03-14
Date of Issue:	2024-03-15
Test Result:	Pass*

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

Keny. XN

Keny Xu EMC Laboratory Manager



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Revision Record					
Version	Chapter	Date	Modifier	Remark	
01		2024-03-15		Original	

Authorized for issue by:		
	(eo-li	
	Leo Li/Project Engineer	
	Eric Fu	
	Eric Fu/Reviewer	



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Test Summary 2

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	
20dB Bandwidth		ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.231(c)	Pass	
Dwell Time (15.231(a))		ANSI C63.10 (2013) Section 7.5	47 CFR Part 15, Subpart C 15.231(a)	Pass	
Field Strength of the Fundamental Signal (15.231(b))	47 CFR Part 15, Subpart C 15.231	ANSI C63.10 (2013) Section 6.5	47 CFR Part 15, Subpart C 15.231(b)	Pass	
Radiated Emissions below 1GHz		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15C Section 15.231(b) and 15.209	Pass	
Radiated Emissions above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15C Section 15.231(b) and 15.209	Pass	



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General Information 4

Details of E.U.T. 4.1

Power supply:	3V DC(3V x 1 "CR2450" Button Cell)
Operation Frequency	433.92MHz
Channel Numbers:	1
Modulation Type:	GFSK
Antenna Gain:	2.67 dBi
Antenna Type:	Spring antenna

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
RF cable	SGS	N/A(cable loss:-2dB)	REF. No.SEL001A0

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty	
20dB Bandwidth	3%	
Dwell Time (15.231(a))	3%	
Field Strength of the Fundamental Signal (15.231(b))	± 6.0dB	
Radiated Emissions below 1GHz	± 6.0dB	
Radiated Emissions above 1GHz	± 4.6dB (1-18GHz);± 4.8dB (18- 40GHz)	

Remark:

The Ulab (lab Uncertainty) is less than Ucispr/ETSI (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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4.4 Test Location

All tests were performed at: SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch No. 1 Workshop, M-10. Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057. Tel: +86 755 2601 2053 Fax: +86 755 2671 0594 No tests were sub-contracted.

4.5 Test Facility

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

A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

FCC – Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 **Equipment List**

20dB Bandwidth					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2023-10-19	2024-10-18
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2023-03-21	2024-03-20
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2023-07-07	2024-07-06
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2023-03-31	2024-03-30
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2023-03-21	2024-03-20

Dwell Time (15.231(a))					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2023-10-19	2024-10-18
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2023-03-21	2024-03-20
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2023-07-07	2024-07-06
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2023-03-31	2024-03-30
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2023-03-21	2024-03-20

Field Strength of the Fundamental Signal (15.231(b))									
Equipment	Cal Date	Cal Due Date							
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18				
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2023-10-19	2024-10-18				
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15				
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2023-03-20	2024-03-19				
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A				
Coaxial Cable	SGS	N/A	SEM025-01	2023-07-07	2024-07-06				



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Radiated Emissions below 1GHz									
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date				
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19				
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18				
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2023-10-19	2024-10-18				
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15				
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2023-03-20	2024-03-19				
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A				
Coaxial Cable	SGS	N/A	SEM025-01	2023-07-07	2024-07-06				

Radiated Emissions above 1GHz									
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date				
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2023-04-01	2026-03-31				
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2023-03-20	2024-03-19				
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22				
Microwave system amplifier	Agilent	83017A	SEM005-25	2023-09-19	2024-09-18				
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A				
Coaxial Cable	SGS	N/A	SEM026-01	2023-07-07	2024-07-06				

General used equipment									
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date				
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2023-07-28	2024-07-27				
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2023-07-28	2024-07-27				
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2023-03-23	2024-03-22				



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Radio Spectrum Technical Requirement 6

6.1 Antenna Requirement

6.1.1 Test Requirement:

CFR Part 15, Subpart C 15.203

61.2 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 integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.67dBi.

Antenna location: Refer to Internal photos



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7 Radio Spectrum Matter Test Results

7.1 20dB Bandwidth

Test Requirement	47 CFR Part 15, Subpart C 15.231(c)
Test Method:	ANSI C63.10 (2013) Section 6.9

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

Remark: For this device, the limit is 433.92MHz*0.25%=1.0848MHz

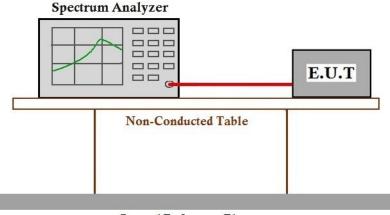
7.1.1 E.U.T. Operation

Operating Enviro	onment:				
Temperature:	23.6 °C	Humidity:	52.3 % RH	Atmospheric Pressure: 1020 m	bar

7.1.2 Test Mode Description

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

7.1.3 Test Setup Diagram



Ground Reference Plane



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7.1.4 Measurement Procedure and Data

🔤 Keysight Spect	trum Analyzer - Oc	cupied BW										
LXI		AC			VSE:INT			GN AUTO		AM Mar 13, 2024	Trac	e/Detector
Center Fre	eq 433.920	0000 MHz	0	Trig: Free	eq: 433.920 Run		z lold:>1	0/10	Radio St	d: None		
		#IFG	ain:Low	#Atten: 2					Radio De	evice: BTS		
, ,												
15 dB/div	Ref 20.0	0 dBm										
Log 5.00												
												Clear Write
-10.0				-	_							
-25.0				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	ᢣ᠕᠁ᡝ	m ~	、 、					
-40.0		"					Jun	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
-55.0 *****	v~r~							•	- Lang	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Average
-70.0												
-85.0												
-100												
												Max Hold
-115												
Center 43:	3 9 MHz	<u> </u>							Sr	an 15 kHz		
#Res BW				#VE	W 680 H	Iz			Sweep	295.6 ms		Min Hold
Occup	ied Band	width			Total P	ower		-6.01	dBm			
		5 /	29 kH	-								Detector
		5.4	23 NH									Peak ►
Transm	it Freq Err	ror	-303	Hz	% of O	BW P o	wer	99	.00 %		Auto	Man
			F F04 1-					20.0				
хавва	ndwidth		5.521 k	HZ	x dB			-20.0)0 dB			
MSG								STATUS				



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7.2 Dwell Time (15.231(a))

Test Requirement	47 CFR Part 15, Subpart C 15.231(a)
Test Method:	N/A

Limit:

Device type	Limit
Manually operated transmitter	The switch automatically deactivate the transmitter within not more than 5 seconds of being released
Automatically actived transmitter	Cease transmission within 5 seconds after activation
Periodic transmissions to determine system integrity of transmitters used in security or safety applications	The total transmission time does not exceed 2 seconds per hour

7.2.1 E.U.T. Operation

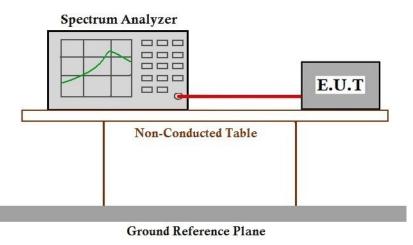
Operating Environment:

1 0						
Temperature:	23.6 °C	Humidity:	50.6 % RH	Atmospheric Pressure:	1020	mbar

7.2.2 Test Mode Description

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

7.2.3 Test Setup Diagram





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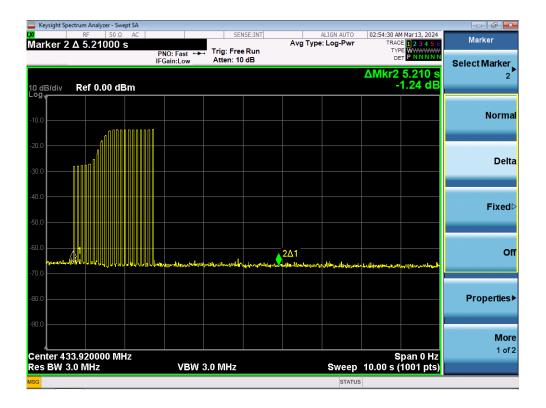
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7.2.4 Measurement Procedure and Data





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7.3 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 (2013) Section 6.5
Measurement Distance:	3m

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.

7.3.1 E.U.T. Operation

Operating Enviro	nment:					
Temperature:	23.5 °C	Humidity:	47.5 % RH	Atmospheric Pressure:	1020	mbar

7.3.2 Test Mode Description

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



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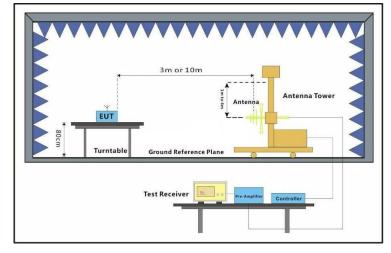
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7.3.3 Test Setup Diagram



7.3.4 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



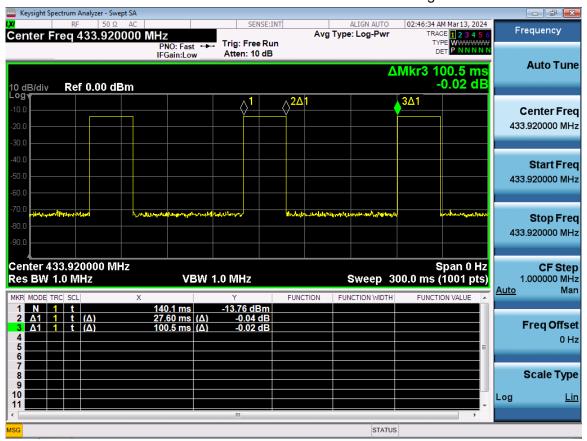
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	Ton time =27.60ms
Toot data:	T period =100.5ms
Test data:	Duty cycle= T on time / T period=28%
	PDCF= 20 log(Duty cycle) =20 log(28%)=-11.18dB



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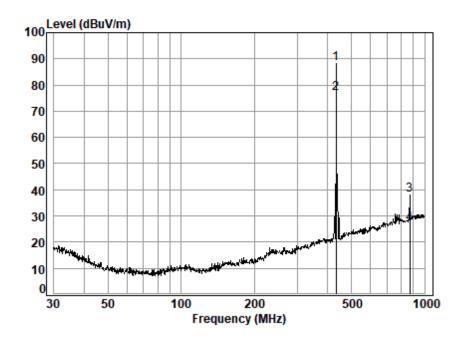
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Test Mode: 00; Polarity: Horizontal



Site :	chamber
Condition:	3m HORIZONTAL
Job No. :	00779AT
Test Mode:	00

		Ant	Cable	Preamp	Read		Limit	0ver	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
-	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p	433.92	21.03	2.67	27.49	91.91	88.12	100.83	-12.71	Peak
2 q	433.92	21.03	2.67	27.49	80.72	76.93	80.83	-3.90	QP
3	867.84	27.65	4.01	27.28	33.68	38.06	80.83	-42.77	Peak
4	867.84	27.65	4.01	27.28	22.50	26.88	60.83	-33.95	QP



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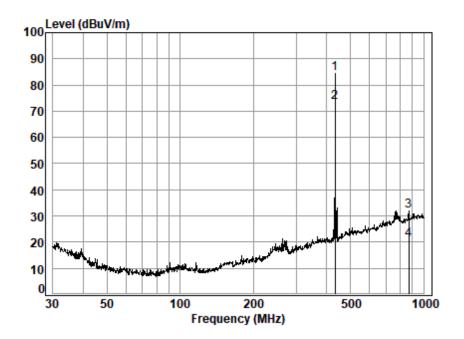
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Test Mode: 00; Polarity: Vertical



Site : chamber Condition: 3m VERTICAL Job No. : 00779AT Test Mode: 00

		Ant	Cable	Preamp	Read		Limit	0ver	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
_	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 p	433.92	21.03	2.67	27.49	88.33	84.54	100.83	-16.29	Peak
2 q	433.92	21.03	2.67	27.49	77.15	73.36	80.83	-7.47	QP
3	867.84	27.65	4.01	27.28	27.73	32.11	80.83	-48.72	Peak
4	867.84	27.65	4.01	27.28	16.55	20.93	60.83	-39.90	QP



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7.4 Radiated Emissions below 1GHz

Test Requirement	47 CFR Part 15C Section 15.231(b) and 15.209
Test Method:	ANSI C63.10 (2013) Section 6.4&6.5
Measurement Distance:	3m

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 guasi-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.

7.4.1 E.U.T. Operation

Operating Environment:

Temperature:	23.5 °C	Humidity: 47.5 % F	RH Atmospheric Pressure: 1020 ml	bar

7.4.2 Test Mode Description

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



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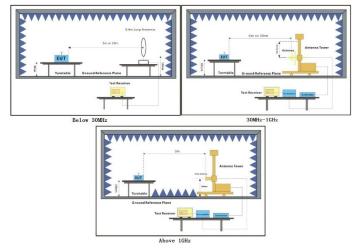
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7.4.3 Test Setup Diagram



7.4.4 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. 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.

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 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) Scan from 9kHz to 1GHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.



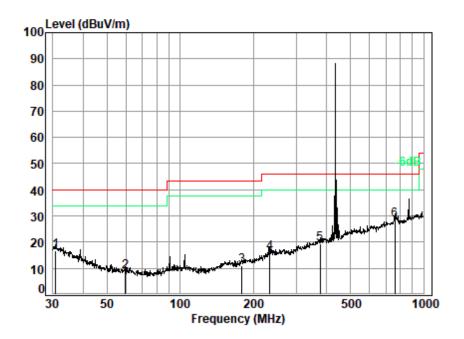
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Report No.: SZCR240300077901 Page: 22 of 28

Test Mode: 00; Polarity: Horizontal



Site :	chamber
Condition:	3m HORIZONTAL
Job No. :	00779AT
Test Mode:	00

		Ant	Cable	Preamp	Read		Limit	0ver	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	30.75	20.86	0.65	27.80	23.17	16.88	40.00	-23.12	QP
2	59.65	11.52	0.92	27.72	23.88	8.60	40.00	-31.40	QP
3	179.39	14.08	1.62	27.32	22.78	11.16	43.50	-32.34	QP
4	233.35	16.87	1.88	27.13	24.18	15.80	46.00	-30.20	QP
5	375.94	20.74	2.46	27.23	23.52	19.49	46.00	-26.51	QP
6 q									-
-									-



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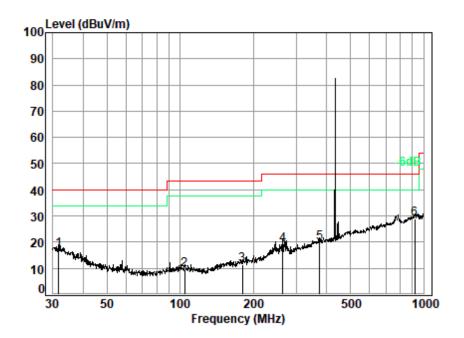
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Test Mode: 00; Polarity: Vertical



Site :	chamber				
Condition:	3m VERTICAL				
Job No. :	00779AT				
Test Mode:	00				

		Ant	Cable	Preamp	Read		Limit	0ver	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
-									
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	31.73	20.39	0.66	27.80	23.76	17.01	40.00	-22.99	QP
2	104.17	12.22	1.21	27.59	23.62	9.46	43.50	-34.04	QP
3	180.65	14.11	1.63	27.32	22.99	11.41	43.50	-32.09	QP
4	263.82	17.11	2.01	27.02	26.88	18.98	46.00	-27.02	QP
5	374.62	20.68	2.45	27.22	23.81	19.72	46.00	-26.28	QP
6 q	922.52	28.19	4.15	27.02	23.39	28.71	46.00	-17.29	QP
-									-



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7.5 Radiated Emissions above 1GHz

Test Requirement 47 CFR Part 15C Section 15.231(b) and 15.209 Test Method: ANSI C63.10 (2013) Section 6.6 Measurement Distance: 3m

7.5.1 E.U.T. Operation

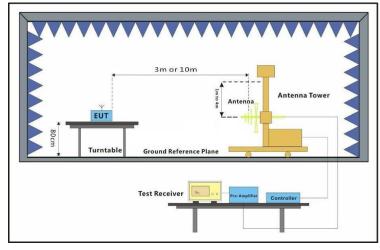
Operating Environment:

Temperature: 19.4 °C Humidity: 52.9 % RH Atmospheric Pressure: 1020 mbar

7.5.2 Test Mode Description

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

7.5.3 Test Setup Diagram





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7.5.4 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.



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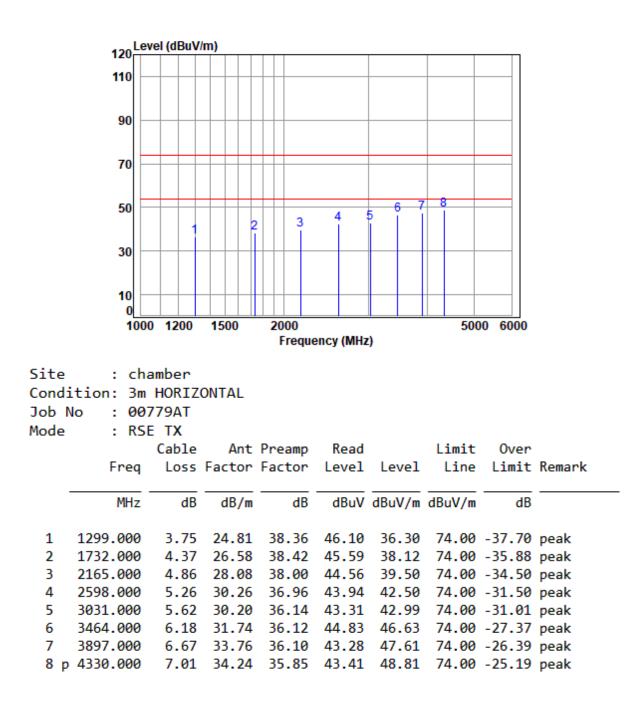
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Test Mode: 00; Polarity: Horizontal





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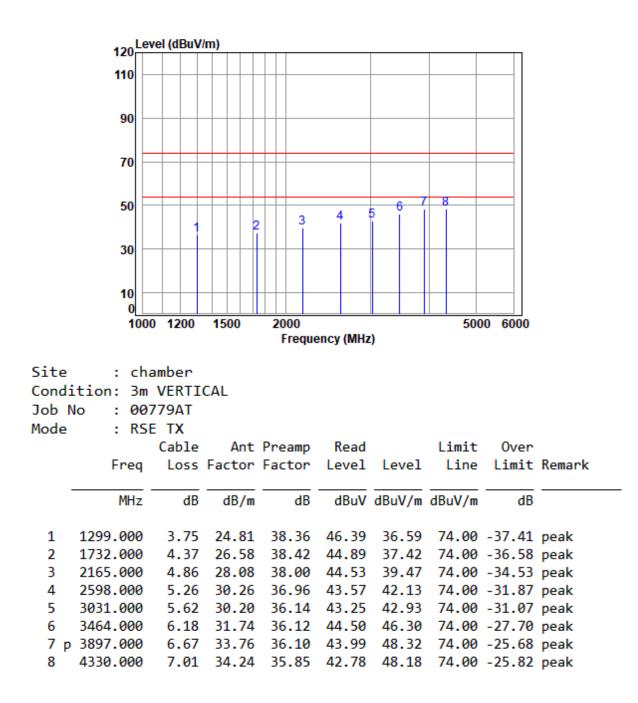
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Test Setup Photo 8

Refer to Setup Photo for SZCR2403000779AT

EUT Constructional Details (EUT Photos) 9

Refer to External and Internal Photos for SZCR2403000779AT

- End of the Report -



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