# **FCC TEST REPORT**

**FCC ID: 2BGP6-XM183B96US** 

**Report No.** : SSP24120006-1E

**Applicant**: Shenzhen Lanbaosi Technology Co.,ltd

**Product Name**: Bathroom mirror

Model Name : XM183-B172-US

**Test Standard**: FCC Part 15.247

**Date of Issue** : 2024-12-31



#### Shenzhen CCUT Quality Technology Co., Ltd.

1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China; (Tel.:+86-755-23406590 website: www.ccuttest.com)

This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.

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**APPROVE** 

#### **Test Report Basic Information**

Applicant..... Shenzhen Lanbaosi Technology Co.,ltd

Room 301, Building 14, Shen'ao Cultural Industrial Park, Bantian Street,

Address of Applicant....: Longgang District, Shenzhen, Guangdong, China

Manufacturer..... Shenzhen Lanbaosi Technology Co.,ltd

Room 301, Building 14, Shen'ao Cultural Industrial Park, Bantian Street,

Address of Manufacturer.....: Longgang District, Shenzhen, Guangdong, China

Product Name..... Bathroom mirror

Brand Name .....: LUVODI

Main Model..... XM183-B172-US

Series Models....: See section 1.1 (Page 5)

FCC Part 15 Subpart C

ANSI C63.4-2014

**Test Standard**...... ANSI C63.10-2013

Test Result..... PASS

(Walker Wu)

(Lieber Ouyang)

**Authorized Signatory....** (Lahm Peng)

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## **Revision History**

Revision	Issue Date	Description	Revised By
V1.0	2024-12-31	Initial Release	Lahm Peng

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#### 1. General Information

#### 1.1 Product Information

Product Name:	Bathroom mirror
Trade Name:	LUVODI
Main Model:	XM183-B172-US
	XM183-B170-US, XM183-B171-US, XM183-B173-US, XM183-B177-US,
	XM183-B178-US, XM183-B179-US, XM183-B181-US, XM183-B182-US,
Series Models:	XM183-B183-US, XM183-B180-US, XM183-B186-US, XM183-B187-US,
	XM183-B188-US, XM183-B190-US, XM183-B192-US, XM183-B193-US,
	XM183-B196-US, XM183-B197-US
Rated Voltage:	DC 12V
Power Adapter:	Input: AC 100-240V/50-60Hz, Output: DC 12V
Battery:	-
Test Sample No:	SSP24120006-1
Hardware Version:	V1.0
Software Version:	V1.0

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Note 1: The test data is gathered from a production sample, provided by the manufacturer.

Note 2: Models XM183-B170-US, XM183-B171-US, XM183-B173-US, XM183-B176-US, XM183-B177-US, XM183-B178-US, XM183-B179-US, XM183-B181-US, XM183-B182-US are different from the main model in terms of appearance shape, size, number of lamp strips and model name, but the main board circuit and electronic structure are the same. The appearance color and model name of other models are different from the main model, but the circuit and electronic structure are the same. Declaration by the manufacturer.

Wireless Specification	
Wireless Standard:	Bluetooth BR/EDR
Operating Frequency:	2402MHz ~ 2480MHz
RF Output Power:	-2.57dBm
Number of Channel:	79
Channel Separation:	1MHz
Modulation:	GFSK, Pi/4 DQPSK
Antenna Gain:	0dBi
Type of Antenna:	PCB Antenna
Type of Device:	☐ Portable Device ☐ Modular Device

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## 1.2 Test Setup Information

List of Test Modes						
Test Mode	De	escription		Remark		
TM1	Low	est Channel		2402MHz(DH5/2DH5)		
TM2	Mide	dle Channel		2441MHz(DH5)	/2DH5)	
TM3	High	est Channel		2480MHz(DH5,	/2DH5)	
TM4	ŀ	Hopping		2402MHz~248	B0MHz	
TM5	Playing	with charging		Bluetooth playing		
List and Detai	ls of Auxiliary	Cable				
Descrij	ption	Length (cm)		Shielded/Unshielded	With/Without Ferrite	
-		-		-	-	
-		-		-	-	
List and Detai	ls of Auxiliary	Equipment				
Descrij	ption	Manufacturer		Model	Serial Number	
-		-		-	-	
-		-		-	-	

List of Chann	nels						
No. of	Frequency	No. of	Frequency	No. of	Frequency	No. of	Frequency
Channel	(MHz)	Channel	(MHz)	Channel	(MHz)	Channel	(MHz)
01	2402	21	2422	41	2442	61	2462
02	2403	22	2423	42	2443	62	2463
03	2404	23	2424	43	2444	63	2464
04	2405	24	2425	44	2445	64	2465
05	2406	25	2426	45	2446	65	2466
~	~	~	~	~	~	~	~
16	2417	36	2437	56	2457	76	2477
17	2418	37	2438	57	2458	77	2478
18	2419	38	2439	58	2459	78	2479
19	2420	39	2440	59	2460	79	2480
20	2421	40	2441	60	2461		

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## 1.3 Compliance Standards

Compliance Standards		
700 D . 45 0 L 0	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES,	
FCC Part 15 Subpart C	Intentional Radiators	
All measurements contained in	this report were conducted with all above standards	
According to standards for te	st methodology	
ECC Dout 15 Culmout C	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES,	
FCC Part 15 Subpart C	Intentional Radiators	
ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions	
ANSI C05.4-2014	from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.	
ANCI CC2 10 2012	American National Standard of Procedures for Compliance Testing of Unlicensed	
ANSI C63.10-2013	Wireless Devices	
Maintenance of compliance is the responsibility of the manufacturer or applicant. Any modification of the product, which		
result is lowering the emission,	should be checked to ensure compliance has been maintained.	

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#### 1.4 Test Facilities

	Shenzhen CCUT Quality Technology Co., Ltd.			
Laboratory Name: 1F, Building 35, Changxing Technology Industrial Park, Yutang				
	Guangming District, Shenzhen, Guangdong, China			
CNAS Laboratory No.:	L18863			
A2LA Certificate No.:	6893.01			
FCC Registration No:	583813			
ISED Registration No.:	CN0164			
All measurement facilities used to collect the measurement data are located at 1F Ruilding 35. Changying				

All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.

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Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date	
	Conducted Emissions					
AMN	ROHDE&SCHWARZ	ENV216	101097	2024-08-07	2025-08-06	
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2024-08-07	2025-08-06	
Test Cable	N/A	Cable 5	N/A	2024-08-07	2025-08-06	
EMI Test Software	FARA	EZ-EMC	EMEC-3A1+	N/A	N/A	
		Radiated Emission	ıs			
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2024-08-07	2025-08-06	
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2024-08-07	2025-08-06	
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40-N	101692	2024-08-07	2025-08-06	
Amplifier	SCHWARZBECK	BBV 9743B	00251	2024-08-07	2025-08-06	
Amplifier	HUABO	YXL0518-2.5-45		2024-08-07	2025-08-06	
Amplifier	COM-MW	DLAN-18G-4G-02	10229104	2024-08-07	2025-08-06	
Loop Antenna	DAZE	ZN30900C	21104	2024-08-03	2025-08-02	
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2024-08-03	2025-08-02	
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2024-08-03	2025-08-02	
Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2024-08-03	2025-08-02	
Attenuator	QUANJUDA	6dB	220731	2024-08-07	2025-08-06	
Test Cable	N/A	Cable 1	N/A	2024-08-07	2025-08-06	
Test Cable	N/A	Cable 2	N/A	2024-08-07	2025-08-06	
Test Cable	N/A	Cable 3	N/A	2024-08-07	2025-08-06	
Test Cable	N/A	Cable 4	N/A	2024-08-07	2025-08-06	
Test Cable	N/A	Cable 8	N/A	2024-08-07	2025-08-06	
Test Cable	N/A	Cable 9	N/A	2024-08-07	2025-08-06	
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A	
Conducted RF Testing						
RF Test System	MWRFTest	MW100-RFCB	220418SQS-37	2024-08-07	2025-08-06	
Spectrum Analyzer	KEYSIGHT	N9020A	ATO-90521	2024-08-07	2025-08-06	
RF Test Software	MWRFTest	MTS 8310	N/A	N/A	N/A	
Laptop	Lenovo	ThlnkPad E15 Gen 3	SPPOZ22485	N/A	N/A	
DUT Test Software	ToolKit	BK32xx RF Test_V1.8.2	N/A	N/A	N/A	

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## 1.6 Measurement Uncertainty

Test Item	Conditions	Uncertainty
Conducted Emissions	9kHz ~ 30MHz	±1.64 dB
	9kHz ~ 30MHz	±2.88 dB
Dadieted Emissions	30MHz ∼ 1GHz	±3.32 dB
Radiated Emissions	1GHz ~ 18GHz	±3.50 dB
	18GHz ∼ 40GHz	±3.66 dB
Conducted Output Power	9kHz ~ 26GHz	±0.50 dB
Occupied Bandwidth	9kHz ~ 26GHz	±4.0 %
Conducted Spurious Emission	9kHz ~ 26GHz	±1.32 dB

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FCC Rule	Description of Test Item	Result
FCC Part 15.207	Conducted Emissions	Passed
FCC Part 15.209, 15.247(d)	Radiated Emissions	Passed

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Passed: The EUT complies with the essential requirements in the standard

Failed: The EUT does not comply with the essential requirements in the standard

N/A: Not applicable

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## 3. Antenna Requirement

#### 3.1 Standard and Limit

According to FCC Part 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.

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#### 3.2 Test Result

This product has an PCB antenna, fulfill the requirement of this section.

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#### 4. Conducted Emissions

#### 4.1 Standard and Limit

According to the rule FCC Part 15.207, Conducted emissions limit, the limit for a wireless device as below:

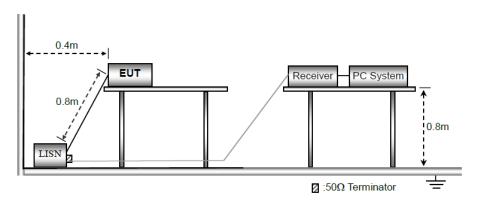
Frequency of Emission	Conducted emissions (dBuV)		
(MHz)	Quasi-peak	Average	
0.15-0.5	66 to 56	56 to 46	
0.5-5	56	46	
5-30	60	50	

Note 1: Decreases with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz

Note 2: The lower limit applies at the band edges

#### **4.2 Test Procedure**

Test is conducting under the description of ANSI C63.10 - 2013 section 6.2.



Test Setup Block Diagram

- a) The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.
- b) The following is the setting of the receiver

Attenuation: 10dB

Start Frequency: 0.15MHz Stop Frequency: 30MHz IF Bandwidth: 9kHz

c) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

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d) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

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- e) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- f) LISN is at least 80 cm from nearest part of EUT chassis.
- g) For the actual test configuration, please refer to the related Item photographs of the test setup.

#### 4.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.207 standard limit for a wireless device, and with the worst case as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

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Test F	Plots a	nd Data	of Con	nduc	ted Eı	niss	sion	S													
Teste	d Mod	del:		XM	183-F	3172	2-US	<u> </u>													
Teste	d Mod	de:		TM	5																
Test V	/oltage	e:		AC	120V	/60	Hz														
		· Line:			ıtral																
Rema					ıway	nro	file														
90.0	dBu	N		1		F															
30.0	u de la						Т														
80																					
70																					
															EC	C Pa	t15 CE	-Class	B UB		
60	;	,													1		TTO CE	Cidaa	<u> </u>		
50	7	3 1 X													FC	C Pa	t15 CE	-Class	B_AVe	îı .	
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10																		$\perp$	Ψ		
-10																					
	150			0.	500				(h	(Hz)			5.0	000						30.00	) )0
		oguopov	Pag	ding		ctor		Level	Lim	vi4	Morai										
No.		equency (MHz)		BuV)		IB)		(dBuV)	(dBu	ıV)	Margi (dB)		etector	P/F	R	Rema	ark				
1 *		0.1995		.16		21		53.37	63.6		-10.2	_	QP	Р							
2		0.1995		.23	_	21	$\perp$	40.44	53.6		-13.19	-	AVG	P	-						
3		0.2445		.54		29 29	+	47.83 31.60	61.9 51.9		-14.1 -20.3	-	QP AVG	P	-						-
5		1.8645		.35		29 46	+	34.81	56.0		-21.1	_	QP	P							-
6		1.8645		.97		46	+	27.43	46.0		-18.5	_	AVG	P							
7		9.7800		.18		56	+	41.74	60.0		-18.20	_	QP	P							-
8		9.7800		.17		56	$\dagger$	36.73	50.0		-13.2	_	AVG	Р							$\neg \neg$
9	1	5.3690	34	.68	9.	57	$\top$	44.25	60.0	00	-15.7	5	QP	Р							$\neg$
10	1	5.3690	29	.13	9.	57	$\dagger$	38.70	50.0	00	-11.3	0	AVG	Р							$\neg$
11	2	3.2845	36	.26	10	.03		46.29	60.0	00	-13.7	1	QP	Р							
12	2	3.2845	29	.05	10	.03		39.08	50.0	00	-10.9	2	AVG	Р							

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Tested Model: XM183-B172-US  Tested Mode: TM5  Test Voltage: AC 120V/60Hz  Test Power Line: Live  Remark: Runway profile  90.0 dBuV  60  70  60  50  70  60  6	
Test Voltage: AC 120V/60Hz  Test Power Line: Live  Remark: Runway profile  90.0 dBuV  80  70  60  50  40  30  20  10	
Test Power Line:  Remark:  Runway profile  90.0 dBuV  80  70  60  50  10  10  10	
Remark: Runway profile  90.0 dBuV  80  70  60  50  10  0  -10	
90.0 dBuV  80  70  60  50  40  30  20  10	
80 70 60 50 40 30 20 10	
FCC Part 15 CE-Class B_Q  FCC Part 15 CE-Class B_A  FCC Part 15 CE-Cla	
FCC Part 15 CE-Class B_Q  FCC Part 15 CE-Class B_A  FCC Part 15 CE-Class B_A  11  20  10  -10	
50	
20 -10	le l
30 20 10 0	-
30 20 10 0	
	J.Ma.
10 0 -10	peak
-10	AVG
0.150 0.500 (MHz) 5.000	
	30.000
No. Frequency (MHz) Reading Factor (dBuV) (dBuV) Hargin (dBuV) (dBuV) Remark	
1 * 0.1949 45.16 9.39 54.55 63.83 -9.28 QP P	
2 0.1949 31.59 9.39 40.98 53.83 -12.85 AVG P	
3 0.2445 39.69 9.48 49.17 61.94 -12.77 QP P	
4 0.2445 21.57 9.48 31.05 51.94 -20.89 AVG P	
5 0.4875 32.36 9.58 41.94 56.21 -14.27 QP P	
6 0.4875 18.21 9.58 27.79 46.21 -18.42 AVG P 7 1.1985 28.09 9.62 37.71 56.00 -18.29 QP P	
7 1.1985 28.09 9.62 37.71 56.00 -18.29 QP P 8 1.1985 14.30 9.62 23.92 46.00 -22.08 AVG P	
9 12.0930 27.96 9.74 37.70 60.00 -22.30 QP P	
10 12.0930 22.14 9.74 31.88 50.00 -18.12 AVG P	
11 16.7460 32.36 9.83 42.19 60.00 -17.81 QP P	
12 16.7460 26.61 9.83 36.44 50.00 -13.56 AVG P	

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Test l	Plots and Data of	Conducte	ed Emissic	ons					
Teste	d Model:	XM1	83-B173-	US					
Teste	d Mode:	TM5							
Test \	Voltage:	AC 1	20V/60H	Z					
Test l	Power Line:	Neut	tral						
Rema	ırk:	Door	r type						
90.0	dBuV	<u>l</u>							
80									
70									
									FCC Part15 CE-Class B_QP
60	1								Tee I dicto de cidos b_di
50	3			_	7				FCC Part15 CE-Class B_AVe
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20		<u> </u>	Markan	musikanapapal	MANAGE AND STREET	201 11 4			AVE
40						ander Arrivala Person	UL NAME CON	ile/ki	
10									
0									
-10									
0.	150	0.5	00		(MHz)		5.0	00	30.000
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1905	43.79	9.21	53.00	64.01	-11.01	QP	Р	
2	0.1905	28.87	9.21	38.08	54.01	-15.93	AVG	Р	
3	0.2535	36.01	9.31	45.32	61.64	-16.32	QP	Р	
5	0.2535 0.9150	18.23 34.06	9.31 9.38	27.54 43.44	51.64 56.00	-24.10 -12.56	AVG QP	P P	
6	0.9150	31.49	9.38	40.87	46.00	-5.13	AVG	Р	
7	1.8285	34.71	9.46	44.17	56.00	-11.83	QP	P	
8 '		33.36	9.46	42.82	46.00	-3.18	AVG	Р	
9	6.8550	34.86	9.57	44.43	60.00	-15.57	QP	Р	
10	6.8550	27.92	9.57	37.49	50.00	-12.51	AVG	Р	
11	9.6045	35.55	9.57	45.12	60.00	-14.88	QP	Р	
12	9.6045	24.59	9.57	34.16	50.00	-15.84	AVG	Р	

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Test I	Plots and Data	of Con	iducte	ed En	nissi	ons	1										
Teste	d Model:		XM1	83-B	173-	-US											
Teste	d Mode:		TM5														
Test \	/oltage:		AC 1	20V/	60H	ĺz											
Test I	Power Line:		Live														
Rema	rk:		Dooi	r type	<u> </u>												
90.0	dBuV																
80						$\forall$											1
70						+											-
60													FCC P	art15	CE-Class B	_QP	
	1		$\rightarrow$	+		$\forall$							FOC P	art15 (	CE-Class B	ΔVe	
50	3		4			5		7			9 40				11 X		1
40		m.			1.			$\stackrel{*}{\rightarrow}$		+	<b>10</b>	<b>.</b>	1111				-
30			JAN .	M	wy	Nur	44HYUHUUMAHA	Arrive	wyakh.	Museum	Josephylan	in <mark>w</mark> uld	hakulajajij	MAN		Halling to the	
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10						$\parallel \parallel$									146		1
0						$\parallel$											-
-10																	
0.	150		0.5	00				(I	MHz)		5.	000				30.0	ŌO
No.	Frequency (MHz)		ding uV)	Fac (dl			Level dBuV)	Lin (dBı		Margin (dB)	Detecto	r P/F	Rer	nark			
1	0.1995	43	.16	9.3		-	52.55	63.		-11.08	QP	Р					
2	0.1995	_	.16	9.3		-	36.55	53.		-17.08	-	P					
3	0.2580	_	.54	9.5		-	46.05 28.58	61. 51.		-15.45 -22.92	_	P P					-
5	0.2380	_	.79	9.5		-	43.36	56.		-12.64		P					
6	0.9150	_	.87	9.5		-	40.44	46.		-5.56	AVG	P					$\neg \neg$
7	1.8240	34.	.70	9.6	65	4	44.35	56.	00	-11.65	QP	Р					
8 *		_	.75	9.6		-	42.40	46.		-3.60	AVG	Р					
9	4.5600	_	.32	9.7		-	45.07	56.		-10.93		P					
10	4.5600	_	.51	9.7		-	41.26	46.		-4.74	AVG	P					
11	12.3315 12.3315		.54 .48	9.7 9.7		-	45.28 36.22	60. 50.		-14.72 -13.78	QP AVG	P P					
	12.0010		. +0	9.1		Т,	00.22			10.70	_ ^,	'					

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8 \*

9

10

11

12

1.3740

1.8375

1.8375

12.3585

12.3585

29.34

33.95

28.88

35.63

26.90

9.44

9.46

9.46

9.54

9.54

38.78

43.41

38.34

45.17

36.44

46.00

56.00

46.00

60.00

50.00

-7.22

-12.59

-7.66

-14.83

-13.56

AVG

QP

AVG

QP

AVG

Р

Р

Р

Р

Р

Test P	lots and Data o	f Conducte	ed Emissio	ons						
Tested	l Model:	XM1	83-B182-	US						
Tested	l Mode:	TM5								
Test V	oltage:	AC 1	20V/60H	Z						
Test P	ower Line:	Neut	tral							
Remai	rk:	Squa	ire							
90.0	dBuV	<u> </u>								
Γ										
80										
70										
60	-								FCC Part15 CE-Class	B_QP
50	3								FCC Part15 CE-Class	B_AVe
40		5		Í	10					
30	MY	Mymm	Lord Control Days	hayatha yayahad ya	hallmarthan raman hall	Maria de la como	Jane June	n mh		
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					valence of a finite straight Mil	verbalities and			I with mil. Miles	, Juliu AAG
10										
0										
-10 0.1	50	0.5	nn		(MHz)		5.0	nn		30.000
i		0.0				1	0.0			
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark	
1	0.1905	45.24	9.21	54.45	64.01	-9.56	QP	Р		
2	0.1905	29.47	9.21	38.68	54.01	-15.33	AVG	P		
3	0.2490	37.90	9.30	47.20	61.79	-14.59	QP	Р		
4	0.2490	19.58	9.30	28.88	51.79	-22.91	AVG	Р		
5 6	0.4605 0.4605	32.30 28.89	9.39 9.39	41.69 38.28	56.68 46.68	-14.99 -8.40	QP AVG	P P		
7	1.3740	32.97	9.44	42.41	56.00	-13.59	QP	Р		
<u>'</u>						10.00		· ·		

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Test l	Plots and Data o	of Conducte	ed Emissio	ons						
Teste	d Model:	XM1	83-B182-	US						
Teste	d Mode:	TM5								
Test \	/oltage:	AC 1	20V/60H	Z						
Test l	Power Line:	Live								
Rema	ırk:	Squa	ıre							
90.0	dBuV									
										]
80										-
70										
									FCC Part15 CE-Class B_QP	
60	1									1
50	3				7			+	FCC Part15 CF-Class B_AVe	-
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20			range	Maramanaly	Manufacture L.	4.01/24/H4.0	╢┉┉┉	Mh		AVG
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10										1
0								+		-
-10 n		0.5	00		(MHz)			100	30.0	] 100
U.	130	0.5	UU		(M112)		5.0	IUU	30.0	
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark	
1	0.1860	45.40	9.40	54.80	64.21	-9.41	QP	Р		
2	0.1860	26.46	9.40	35.86	54.21	-18.35	AVG	Р		
3 4	0.2714	35.35	9.53	44.88	61.07	-16.19	QP	Р		
5	0.2714 0.4605	17.50 32.36	9.53 9.58	27.03 41.94	51.07 56.68	-24.04 -14.74	AVG QP	P P		
6	0.4605	29.76	9.58	39.34	46.68	-7.34	AVG	P		
7	1.8375	34.40	9.65	44.05	56.00	-11.95	QP	Р		
8 *	1.8375	29.87	9.65	39.52	46.00	-6.48	AVG	Р		
9	3.2100	30.41	9.70	40.11	56.00	-15.89	QP	Р		
10	3.2100	16.92	9.70	26.62	46.00	-19.38	AVG	Р		
11	12.8535	37.59	9.74	47.33	60.00	-12.67	QP	Р		
12	12.8535	28.94	9.74	38.68	50.00	-11.32	AVG	P		

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#### 5. Radiated Emissions

#### 5.1 Standard and Limit

According to §15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

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According to the rule FCC Part 15.209, Radiated emission limit for a wireless device as below:

Funguerary of amigains (MIII)	Radiated emissions (3m)						
Frequency of emission (MHz)	Quasi-peak (dBuV/m)						
30-88	40						
88-216	43.5						
216-960	46						
Above 960	54						
Note: The more stringent limit applies at transition frequencies.							

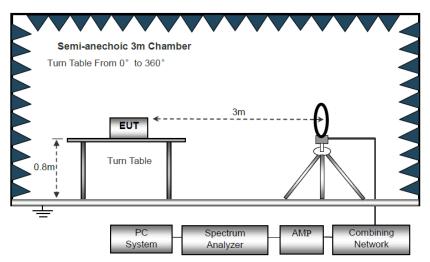
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

Note: Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

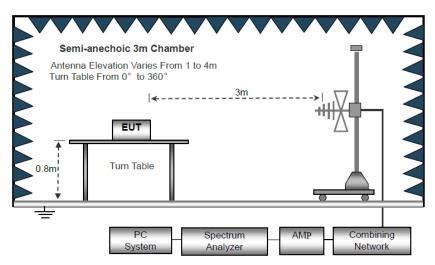
#### **5.2 Test Procedure**

Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.

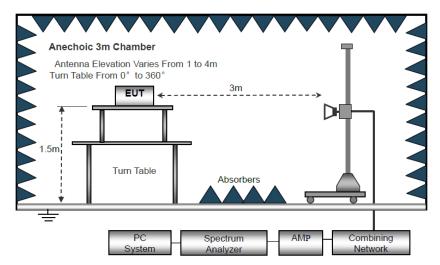
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Block Diagram of Radiated Emission Below 30MHz



Block Diagram of Radiated Emission From 30MHz to 1GHz



Block Diagram of Radiated Emission Above 1GHz

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a) The EUT is placed on a turntable, which is 0.8m above ground plane for test frequency range blew 1GHz, and

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- 1.5m above ground plane for test frequency range above 1GHz.
- b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest

emissions.

c) Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for  $f \ge 1$ GHz, 100 kHz for f < 1 GHz, 10kHz for f < 30MHz

VBW ≥ RBW, Sweep = auto

Detector function = peak

Trace = max hold

d) Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

e) The peak level, once corrected, must comply with the limit specified in Section 15.209. Set the RBW = 1MHz, VBW = 10Hz, Detector = PK for AV value, while maintaining all of the other instrument settings.

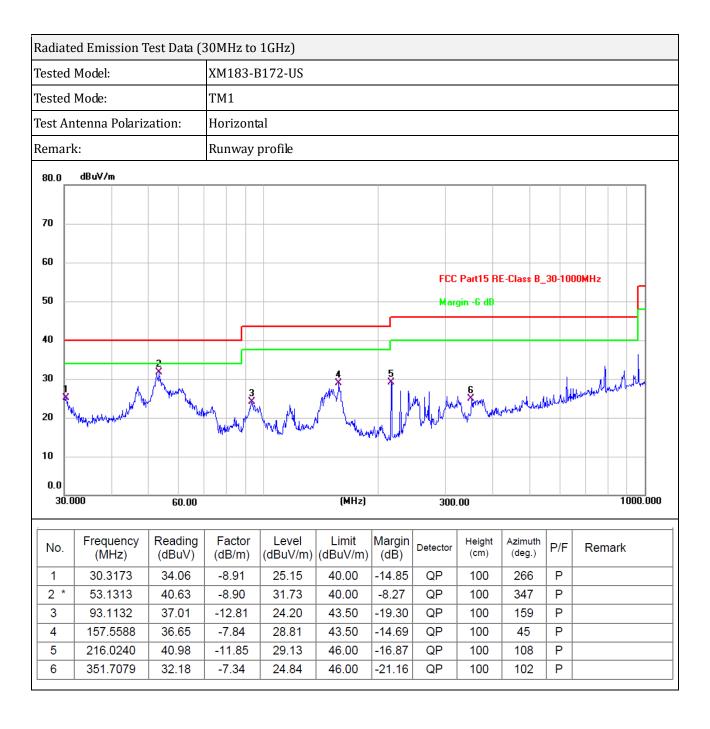
f) For the actual test configuration, please refer to the related item - EUT test photos.

#### 5.3 Test Data and Results

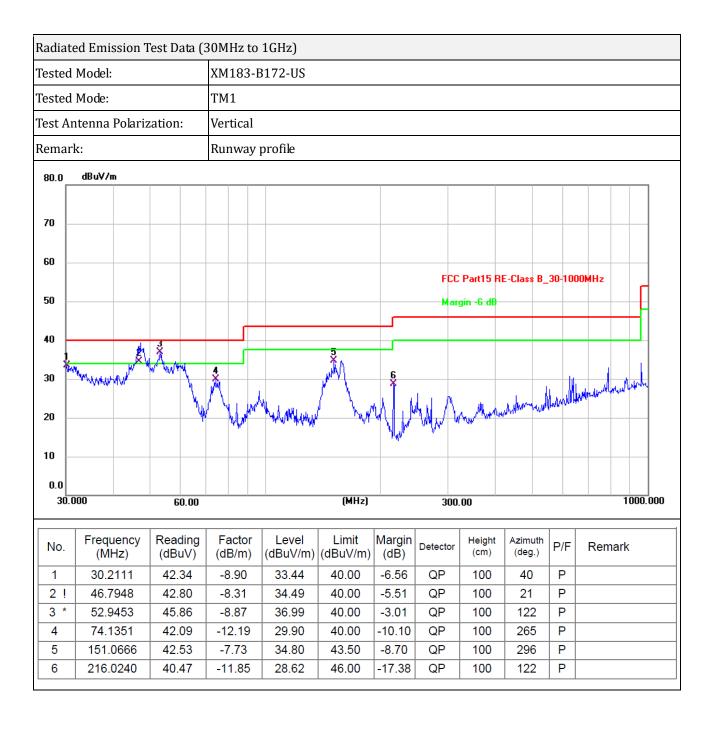
All of the GFSK and  $\pi/4$  DQPSK modes have been tested, the EUT complied with the FCC Part 15.247 standard limit for a wireless device, and with the worst case GFSK\_2402MHz as below:

Remark: Level = Reading + Factor, Margin = Level - Limit

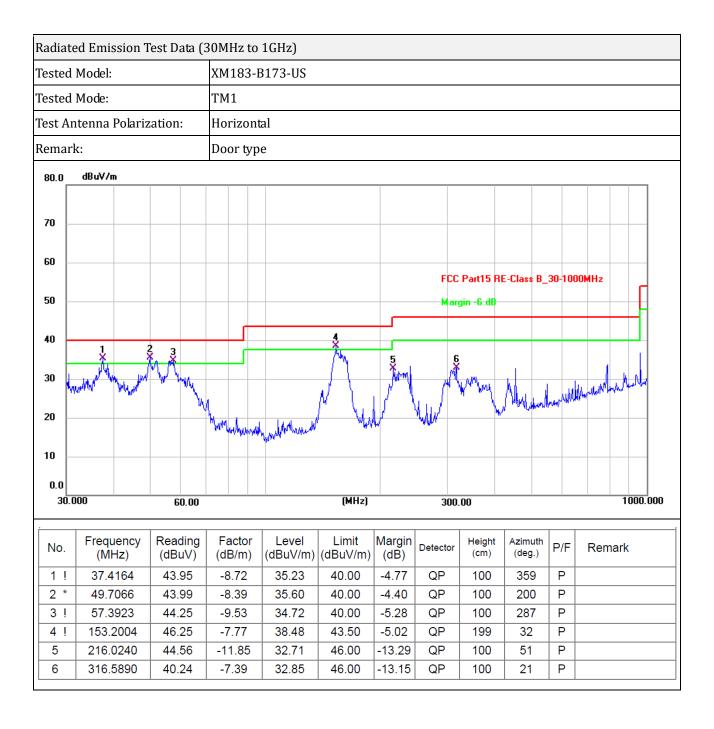
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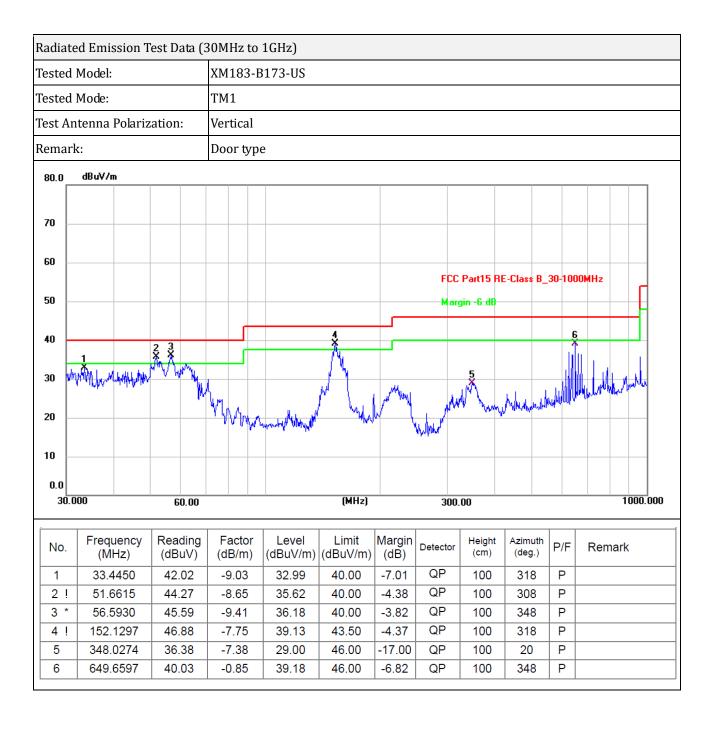
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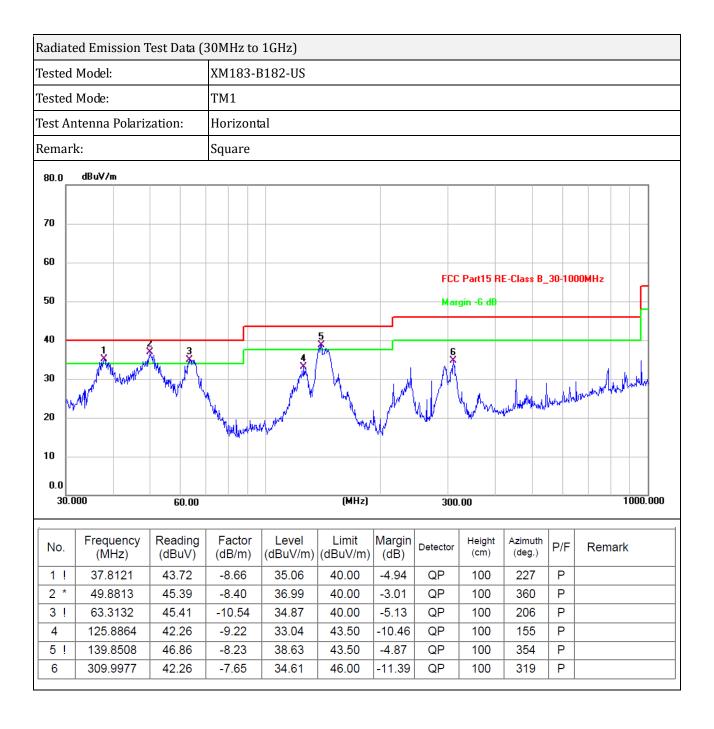
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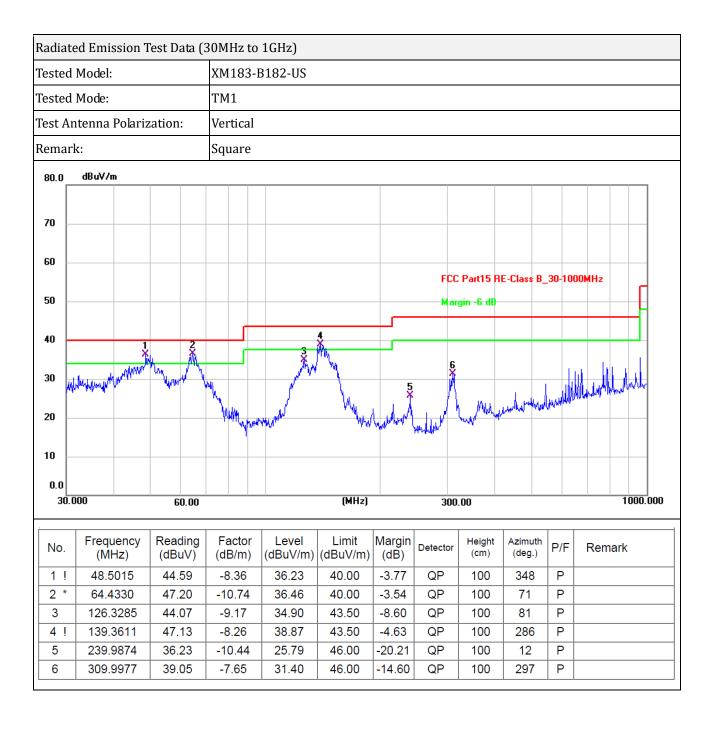
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Radiated Emi	ssion Test Dat	a (Above 1GHz	z)								
Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector				
MHz	dBuV/m	dB/m	dBuV/m	dBuV/m	dB	H/V	PK/AV				
		Lov	west Channel (	GFSK_2402MI	Hz)						
4804	76.93	-14.72	62.21	74	-11.79	Н	PK				
4804	59.92	-14.72	45.2	54	-8.8	Н	AV				
7206	64.1	-8.41	55.69	74	-18.31	Н	PK				
7206	48.73	-8.41	40.32	54	-13.68	Н	AV				
4804	75.14	-14.72	60.42	74	-13.58	V	PK				
4804	57.01	-14.72	42.29	54	-11.71	V	AV				
7206	62.35	-8.41	53.94	74	-20.06	V	PK				
7206	49.38	-8.41	40.97	54	-13.03	V	AV				
Middle Channel (GFSK_2441MHz)											
4882	76.89	-14.64	62.25	74	-11.75	Н	PK				
4882	59.46	-14.64	44.82	54	-9.18	Н	AV				
7323	63.77	-8.28	55.49	74	-18.51	Н	PK				
7323	45.96	-8.28	37.68	54	-16.32	Н	AV				
4882	77.15	-14.64	62.51	74	-11.49	V	PK				
4882	58.39	-14.64	43.75	54	-10.25	V	AV				
7323	64.48	-8.28	56.2	74	-17.8	V	PK				
7323	47.53	-8.28	39.25	54	-14.75	V	AV				
		Hig	hest Channel (	(GFSK_2480M	Hz)						
4960	74.11	-14.53	59.58	74	-14.42	Н	PK				
4960	62.87	-14.53	48.34	54	-5.66	Н	AV				
7440	65.71	-8.13	57.58	74	-16.42	Н	PK				
7440	50.1	-8.13	41.97	54	-12.03	Н	AV				
4960	74.13	-14.53	59.6	74	-14.4	V	PK				
4960	57.92	-14.53	43.39	54	-10.61	V	AV				
7440	65.5	-8.13	57.37	74	-16.63	V	PK				
7440	50.78	-8.13	42.65	54	-11.35	V	AV				

Note 1: All models have been tested, and the above data only reflects the worst-case scenario of the main test model XM183-B172-US

Note 2: All of the GFSK,  $\pi/4$  DQPSK modes have been tested. This EUT was tested in 3 orthogonal positions and the worst case position data of GFSK was reported.

Note 3: Testing is carried out with frequency rang 9kHz to the tenth harmonics. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

Note 4: Other emissions are attenuated 20dB below the limits from 9kHz to 30MHz, so it does not recorded report, 18GHz-26GHz not recorded for no spurious point have a margin of less than 6 dB with respect to the limits.

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

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