

FCC Test Report

Report No.: AGC07434250348FR02

FCC ID	:	2ARXB-B1C
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Label Printer
BRAND NAME	:	NIIMBOT
MODEL NAME	:	NIIMBOT B1, B1 SE, NIIMBOT B1_X, NIIMBOT B1_A
APPLICANT	:	Wuhan Jingchen Intelligent Identification Technology Co., Ltd.
DATE OF ISSUE	:	May 08, 2025
STANDARD(S)	:	FCC Part 15 Subpart C §15.247
REPORT VERSION	:	V1.0







Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 08, 2025	Valid	Initial Release



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1. General Information

Applicant	Wuhan Jingchen Intelligent Identification Technology Co., Ltd.
Address	No. 5, Creative Workshop, Creative World, Yezhihu West Road, Hongshan District, Wuhan, China
Manufacturer	Wuhan Jingchen Intelligent Identification Technology Co., Ltd.
Address	No. 5, Creative Workshop, Creative World, Yezhihu West Road, Hongshan District, Wuhan, China
Factory	Dongxihu branch of Wuhan Jingchen Intelligent Identification Technology Co., Ltd.
Address	No. 20, Xincheng eighteen Road, Changqing Street, Dongxihu District, Wuhan, Hubei Province, China
Product Designation	Label Printer
Brand Name	NIIMBOT
Test Model	NIIMBOT B1
Series Model	B1 SE, NIIMBOT B1_X, NIIMBOT B1_A
Declaration of Difference	All the same except for the model name.
Date of receipt of test item	Mar. 25, 2025
Date of Test	Apr. 07, 2025~May 08, 2025
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Test Report Form No	AGCER-FCC-BLE-V1

Note: The test results of this report relate only to the tested sample identified in this report.

TCI Li Prepared By Cici Li May 08, 2025 (Project Engineer) Bibo zhang **Reviewed By** Bibo Zhang May 08, 2025 (Reviewer) Approved By

Angela Li (Authorized Officer)

May 08, 2025



2. Product Information

2.1 Product Technical Description

Technology Type	Bluetooth Low Energy
Frequency Band	2400MHz-2483.5MHz
Operation Frequency Range	2402MHz-2480MHz
Bluetooth Version	V5.0
Modulation Type	BLE GFSK 1Mbps GFSK 2Mbps
Number of channels	40
Carrier Frequency of Each Channel	40 Channels (37 Data channels + 3 Advertising channels)
Channel Separation	2 MHz
Maximum Transmitter Power	-4.532dBm
Hardware Version	V6.01
Software Version	V6.10
Antenna Designation	PCB Antenna
Antenna Gain	-1.028dBi
Power Supply	DC 7.4V by battery or DC 5V by adapter

2.2 Test Frequency List

Frequency Band	Channel Number	Test Frequency		
	0	2402 MHz		
	1	2404 MHz		
	:	:		
2400~2483.5MHz	19	2440MHz		
	:	:		
	38	2478 MHz		
	39	2480 MHz		
Note: f = 2402 + 2*k MHz, k = 0,, 39 f is the operating frequency (MHz); k is the operating channel.				



2.3 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2ARXB-B1C**, filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

2.4 Test Methodology

The tests were performed according to following standards:

No.	Identity	Document Title		
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations		
2	FCC 47 CFR Part 15	Radio Frequency Devices		
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices		
4	KDB 558074 D01 15.247 Meas Guidance v05r02	Guidance for compliance measurements on Digital Transmission Systems, Frequency Hopping Spread Spectrum system, and Hybrid system devices operating under Section 15.247 of the FCC rules		

2.5 Special Accessories

Not available for this EUT intended for grant.

2.6 Equipment Modifications

Not available for this EUT intended for grant.

2.7 Antenna Requirement

Standard 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 non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is -1.028dBi.



3. Test Environment

3.1 Address of the Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 Test Facility

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories).

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



3.3 Environmental Conditions

	Normal Conditions
Temperature range (°C)	15 - 35
Relative humidity range	20 % - 75 %
Pressure range (kPa)	86 - 106
Power supply	DC 7.4V by battery of DC 5V from adapter

3.4 Measurement Uncertainty

The reported uncertainty of measurement y $\pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty		
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$		
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$		
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$		
Uncertainty of total RF Power, Conducted	$U_c = \pm 0.8 \text{ dB}$		
Uncertainty of RF Power Density, Conducted	$U_c = \pm 2.6 \text{ dB}$		
Uncertainty of Spurious Emissions, Conducted	$U_c = \pm 2 \%$		
Uncertainty of Occupied Channel Bandwidth	U _c = ±2 %		
Uncertainty of Dwell Time	U _c = ±2 %		



3.5 List of Equipment Use

• F	RF Conducted Test System							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
\boxtimes	AGC-ER-E036	Spectrum Analyzer	Agilent	N9020A	MY49100060	2024-05-24	2025-05-23	
\boxtimes	AGC-ER-E062	Power Sensor	Agilent	U2021XA	MY54110007	2025-01-14	2026-01-13	
\boxtimes	AGC-ER-E063	Power Sensor	Agilent	U2021XA	MY54110009	2025-01-14	2026-01-13	
\boxtimes	AGC-ER-A007	6dB Fixed Attenuator	Mini circuits	BW-S6-2W263A+	N/A	2025-01-30	2026-01-29	
	AGC-ER-E083	Signal Generator	Agilent	E4421B	US39340815	2024-05-23	2025-05-22	
\boxtimes	N/A	RF Connection Cable	N/A	1#	N/A	Each time	N/A	
\boxtimes	N/A	RF Connection Cable	N/A	2#	N/A	Each time	N/A	

• F	Radiated Spurious Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
\boxtimes	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2025-01-14	2026-01-13	
\boxtimes	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2024-05-28	2025-05-27	
\boxtimes	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2024-03-05	2026-03-04	
\boxtimes	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023-05-11	2025-05-10	
\boxtimes	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2025-03-27	2026-03-26	
\boxtimes	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2023-09-24	2025-09-23	
\boxtimes	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2024-07-24	2026-07-23	
\boxtimes	AGC-EM-A119	2.4G Filter	SongYi	N/A	N/A	2024-05-23	2025-05-22	
\boxtimes	AGC-EM-A138	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2025-06-08	
	AGC-EM-A139	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2025-06-08	

• A	AC Power Line Conducted Emission								
Used	Equipment No. Test Equipment Manufacturer		Model No. Serial No.		Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)			
\boxtimes	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2024-05-24	2025-05-23		
\boxtimes	AGC-EM-A130	6dB Attenuator	Eeatsheep	LM-XX-6-5W	DC-6GZ	2024-02-01	2026-01-31		
\square	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2024-05-28	2025-05-27		



Test Software								
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information			
	AGC-EM-S001	CE Test System	R&S	ES-K1	V1.71			
	AGC-EM-S003	RE Test System	FARA	EZ-EMC	VRA-03A			
\boxtimes	AGC-ER-S012	BT/WIFI Test System	Tonscend	JS1120-2	2.6			
\square	AGC-EM-S011	RSE Test System	Tonscend	TS+-Ver2.1(JS36-RSE)	4.0.0.0			



4.System Test Configuration

4.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

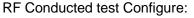
4.2 EUT Exercise

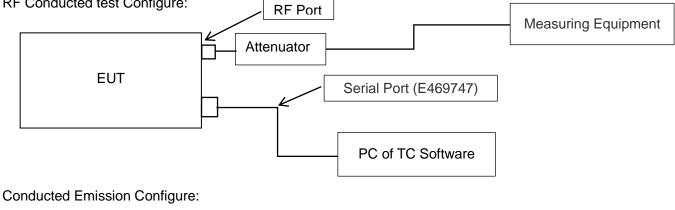
The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

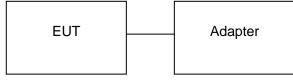
4.3 Configuration of Tested System

Radiated Emission Configure:

EUT (Powered by battery)









4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement: Test Accessories Come From The Laboratory

			•		
No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
1	Adapter	Huawei	HW-200440C00	Input(AC):100V-240V 50/60Hz 2.4A Output(DC):USB-C(5V/3A)	1.0m unshielded
2	Control Box		E469747		
	Test Accessories	Come From The Manu	facturer		
No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
1	Battery 1#	GuangDong JinLu New Energy Co., Ltd.	JL-B201-1500mAh	DC 7.4V 1500mAh	
2	Battery 2#	GUANGDONG BERON ENERGY TECHNOLOGY CO., LTD.	BL-2S1P18650-7.4V 1500mAh	DC 7.4V 1500mAh	



4.5 Summary of Test Results

Item	FCC Rules	Description of Test	Result
1	§15.203&15.247(b)(4)	Antenna Equipment	Pass
2	§15.247 (b)(3)	RF Output Power	Pass
3	§15.247 (a)(2)	6 dB Bandwidth	Pass
4	§15.247 (e)	Power Spectral Density	Pass
5	§15.247 (d)	Conducted Band Edge and Out-of-Band Emissions	Pass
6	§15.209	Radiated Emission& Band Edge	Pass
7	§15.207	AC Power Line Conducted Emission	Pass

Note: The prototype has two types of batteries (Battery 1#:JL-B201-1500mAh and Battery 2#: BL-2S1P18650-7.4V 1500mAh). In response to this difference, both prototypes were tested for AC Power Line Conducted Emission and Radiated Spurious Emission.



5. Description of Test Modes

	Summary Table of Test Cases					
Test Item	Data Rate / Modulation					
iest nem	Bluetooth–LE(1Mbps/2Mbps)/GFSK					
	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps(Battery powered or AC/DC adapter)					
Radiated & Conducted Test Cases	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps(Battery powered or AC/DC adapter)					
	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps(Battery powered or AC/DC adapter)					
AC Conducted Emission	Mode 1: Bluetooth Link + Battery1# + USB Cable (Charging from AC Adapter) Mode 2: Bluetooth Link + Battery2# + USB Cable (Charging from AC Adapter)					

Note:

- 1. Only the result of the worst case was recorded in the report, if no other cases.
- 2. 3. The battery is full-charged during the test.
- For Radiated Emission, 3axis were chosen for testing for each applicable mode.
- 4. For Conducted Test method, a temporary antenna connector is provided by the manufacture.

Software	Setting	Diagram
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그지국부부가 구선 전기	Select INI	Frequen	CY 2402MHZ 💌	SELECT
Select ROM Download 可以直接拖动ini文件和下	双回忤判程序	ModulationRa	te GFSK 💌	SELECT
ROM Path: C:\Users\Administrator\Desktop\Fcc_test_tool\program	n\24MH	TX/I	X TX -	SELECT
		BT/BLE/BLE 2M/2.4	IG BLE 💌	SELECT
[Carrier/da	ta Data 💌	SELECT
downloading e hu success!		Data Leng	th dh1 💌	SELECT
download finish set [download rom file] success!		Freq hop/	fix hop 💌	SELECT
set [freq] success!		Frequency Offs	et	SET
set [tx/rx] success!		Pow	er 0 💌	SELECT
set [bt/ble] success!		发包切换 othe	r ▼ selec	
set [data] success!		频偏调试 Ox8		
set [select] success!			4 <u> selec</u>	
set [select] success!				



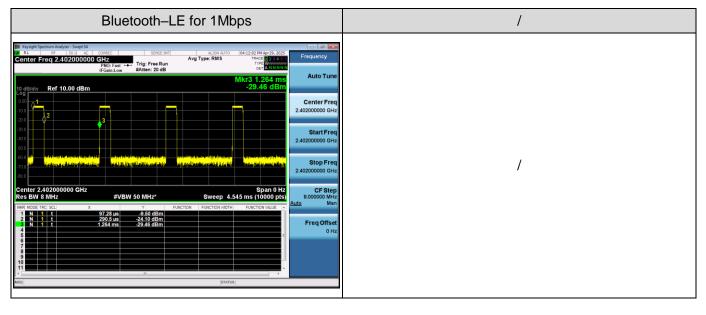
6. Duty Cycle Measurement

The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = Peak. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Operating mode	Operating mode T(µs) Duty C		Duty Cycle Factor (dB)	1/ T Minimum VBW (kHz)		
BLE_1Mbps	193.22	16.56	-7.81	5.18		

Remark:

- 1. Duty Cycle factor = $10 * \log (1 / \text{Duty cycle})$
- 2. The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value
- The test plots as follows:





7. RF Output Power Measurement

7.1 Provisions Applicable

For DTSs employing digital modulation techniques operating in the bands 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W.

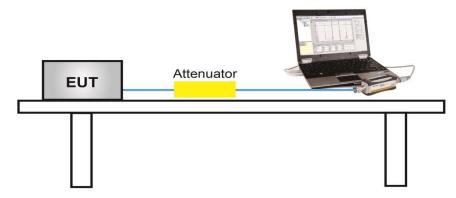
7.2 Measurement Procedure

For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.1 Method Max peak power:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the RBW≥DTS bandwidth
- 3. Set the VBW≥[3 × RBW].
- 4. Span≥[3 × RBW].
- 5. Sweep= auto couple.
- 6. Detector Function= Peak.
- 7. Trace mode= Max hold.
- 8. Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.
- For Average power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G:
- 1. The RF output of EUT was connected to the power meter by RF cable and attenuator.
- 2. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Measure the conducted output power and record the results in the test report.

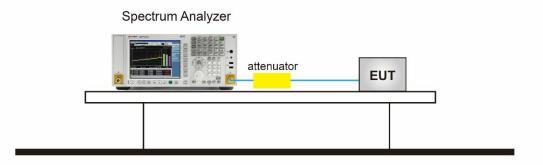
7.3 Measurement Setup (Block Diagram of Configuration)

For Average power test setup





For peak power test setup



7.4 Measurement Result

Test Data of Conducted Output Power								
Test Mode	Test Frequency (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail				
	2402	-4.639	≪30	Pass				
GFSK_1Mbps	2440	-4.532	≪30	Pass				
	2480	-5.079	≤30	Pass				





Test Graphs of Conducted Output Power



🎉 Keysight Spectrum Analyzer - Swept SA				
RF 50 Ω AC Center Freq 2.480000000	CORREC SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	04:20:06 PM Apr 29, 2025 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 40 dB	Avg Hold: 100/100	DET PNNNN	
		Mkr1	2.479 972 GHz	Auto Tune
10 dB/div Ref 30.00 dBm			-5.079 dBm	
Log				
20.0				Center Freq
20.0				2.480000000 GHz
10.0				
				Start Freq
0.00	1			2.477500000 GHz
-10.0				Stop Freq
a second second			mon and a second s	2.482500000 GHz
-20.0			and all all all all all all all all all al	
-30.0				CF Step
-30.0				500.000 kHz Auto Man
-40.0				Auto Man
-50.0				Freq Offset 0 Hz
				0 H2
-60.0				
Center 2.480000 GHz			Span 5.000 MHz	
#Res BW 1.5 MHz	#VBW 5.0 MHz	Sweep 1	.066 ms (1000 pts)	
MSG		STATUS	3	
Test_G	Graph_LE1M_ANT1	_2480_1Mbps_	Peak Power	



8. 6dB Bandwidth Measurement

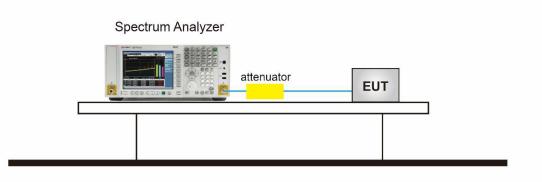
8.1 Provisions Applicable

The minimum 6dB bandwidth shall be 500 kHz.

8.2 Measurement Procedure

- The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
- 1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously.
- 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
- For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the OBW and set the Video bandwidth (VBW) ≥ 3 * RBW.
- 5. Measure and record the results in the test report.

8.3 Measurement Setup (Block Diagram of Configuration)

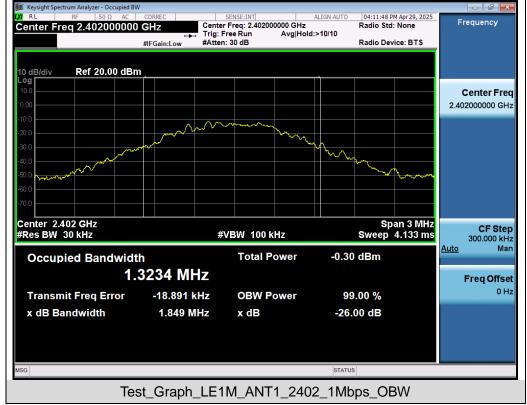




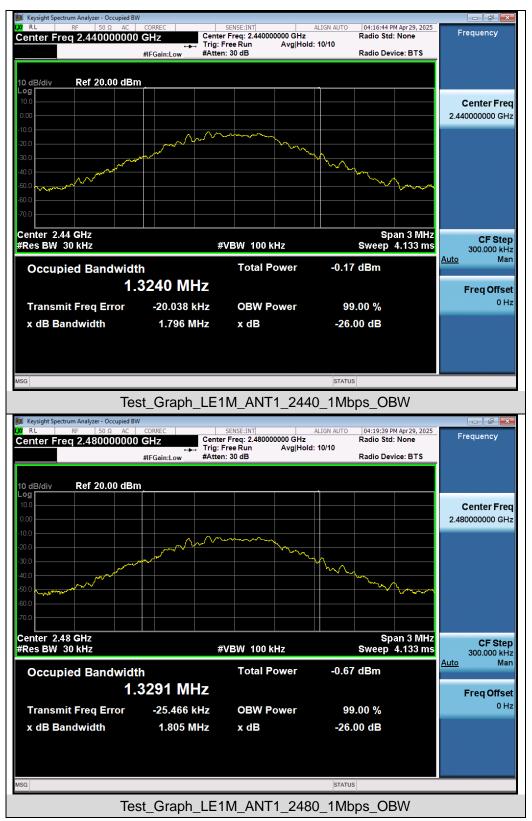
8.4 Measurement Results

Test Data of Occupied Bandwidth and DTS Bandwidth								
Test Mode Test Frequency (MHz)		Occupied Bandwidth (MHz)	DTS BW (MHz)	DTS BW Limits	Pass or Fail			
GFSK_1Mbps	2402	1.323	0.745	≥0.5	Pass			
	2440	1.324	0.745	≥0.5	Pass			
	2480	1.329	0.746	≥0.5	Pass			

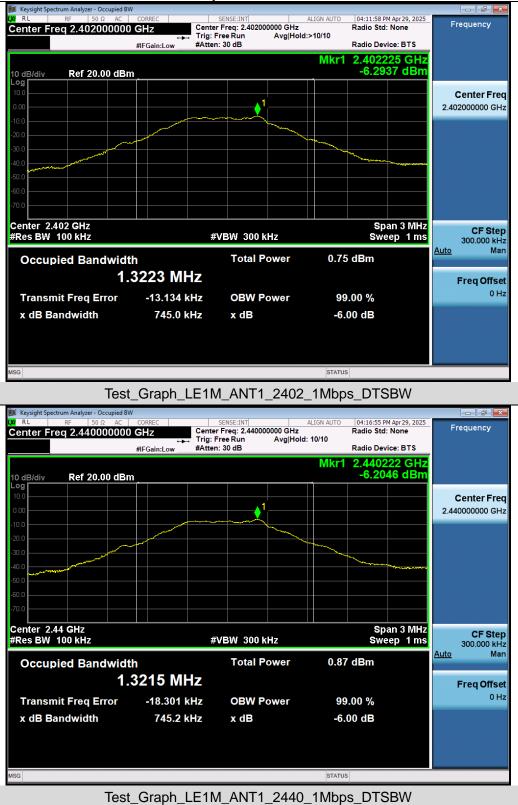
Test Graphs of Occupied Bandwidth













	trum Analyzer - Occupied B				1				_	
Center Fre	RF 50 Ω AC eq 2.480000000	CORREC GHz	Center F	INSE:INT Freq: 2.48000		ALIGN AUTO	04:19:51 F Radio Std	M Apr 29, 2025 I: None	Freq	uency
		Trig: Free Run Avg Hold: 10/10 #FGain:Low #Atten: 30 dB Radio Device: BTS								
						Mkr1	2.4802	225 GHz		
10 dB/div	Ref 20.00 dBr	n						82 dBm		
Log 10.0										
0.00				<u>1</u>						nter Freq
-10.0									2.40000	0000 0112
-20.0					man and a second					
-30.0										
-40.0	the second se						and the second s	Mary Mary Mary Martin		
-50.0										
-60.0										
-70.0										
Center 2.4	L8 GH7						Sn	an 3 MHz		
#Res BW			#V	BW 300 k	Hz			eep 1 ms	30	CF Step 0.000 kHz
0		11a		Total Power 0.36 dBm				Auto	Man	
Occup	ied Bandwid			Totarr	OWGI	0.50	ubm			
	1.	3248 M	ĦΖ						Fre	eq Offset
Transm	it Freq Error	-20.756	kHz	OBW P	ower	99	9.00 %			0 Hz
x dB Ba	ndwidth	745.8	kHz	x dB		-6.	00 dB			
MSG	ASG STATUS									
	Test	_Graph_	I F1M	ANT1	2480	1Mbp	S DTS	SBW		
	100						<u> </u>			



9. Power Spectral Density Measurement

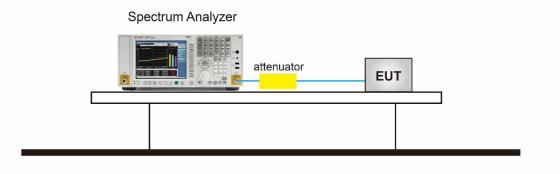
9.1 Provisions Applicable

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

9.2 Measurement Procedure

- The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
- 1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously.
- 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz in order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
- 4. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
- 5. Measure and record the results in the test report.
- 6. The Measured power density (dBm)/ 100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

9.3 Measurement Setup (Block Diagram of Configuration)

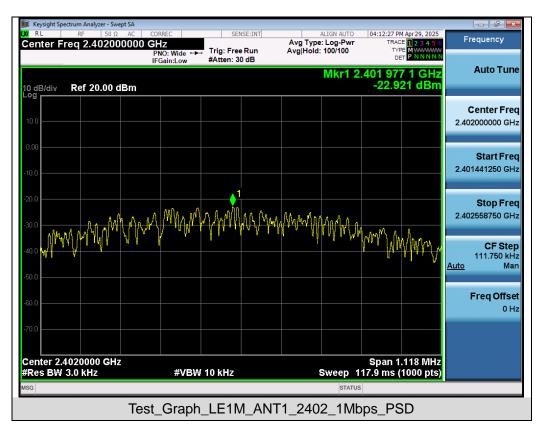




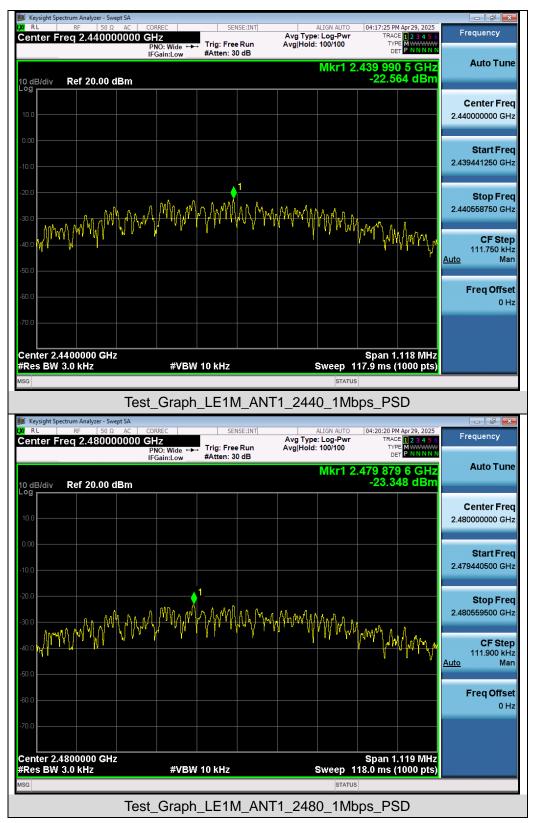
9.4 Measurement Results

Test Data of Conducted Output Power Spectral Density						
Test Mode	Test Frequency (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail		
GFSK_1Mbps	2402	-22.921	≪8	Pass		
	2440	-22.564	≪8	Pass		
	2480	-23.348	≪8	Pass		

Test Graphs of Conducted Output Power Spectral Density









10. Conducted Band Edge and Out-of-Band Emissions

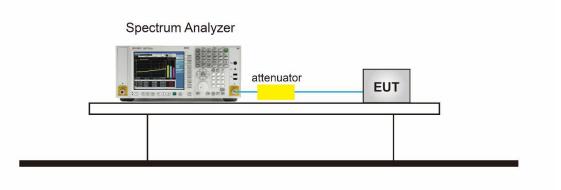
10.1 Provisions Applicable

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the PSD procedure.

10.2 Measurement Procedure

- Reference level measurement
- 1. Set instrument center frequency to DTS channel center frequency
- 2. Set the span to \geq 1.5 times the DTS bandwidth
- 3. Set the RBW = 100 kHz
- 4. Set the VBW \ge 3 x RBW
- 5. Detector = peak
- 6. Sweep time = auto couple
- 7. Trace mode = max hold
- 8. Allow trace to fully stabilize
- Emission level measurement
- 1. Set the center frequency and span to encompass frequency range to be measured
- 2. RBW = 100kHz
- 3. VBW = 300kHz
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep time = auto couple
- 7. The trace was allowed to stabilize

10.3 Measurement Setup (Block Diagram of Configuration)



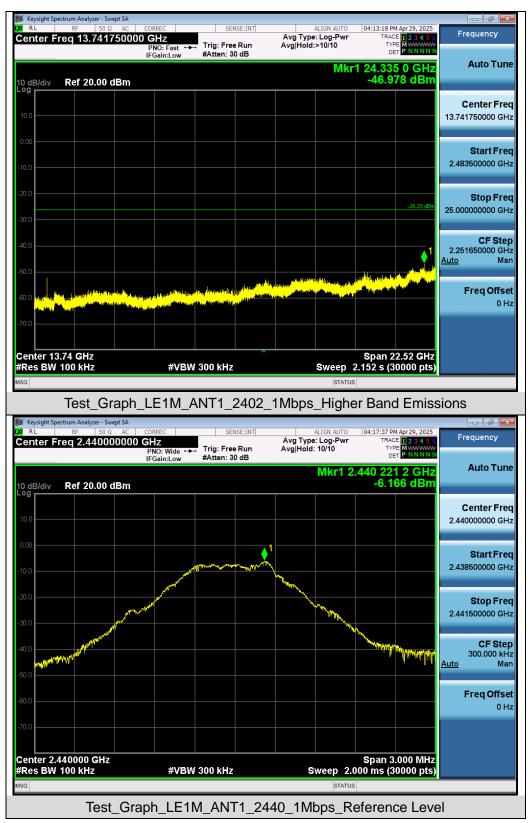


10.4 Measurement Results

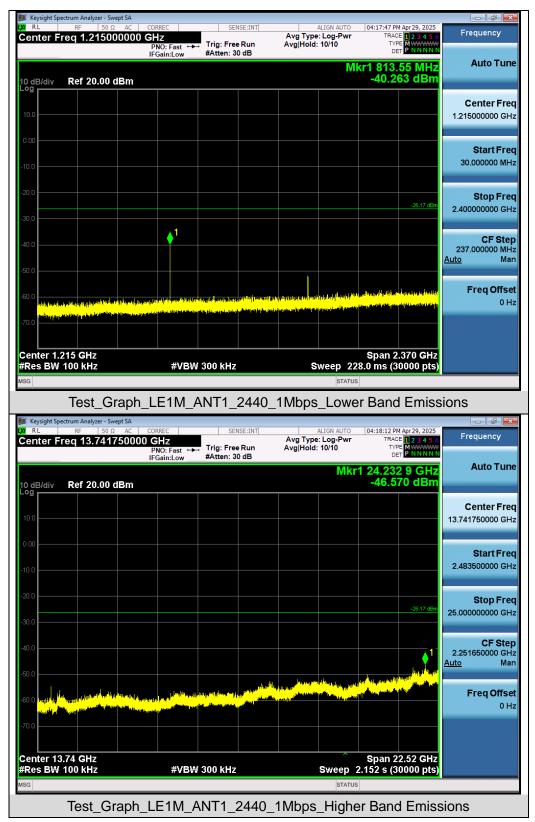


Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands

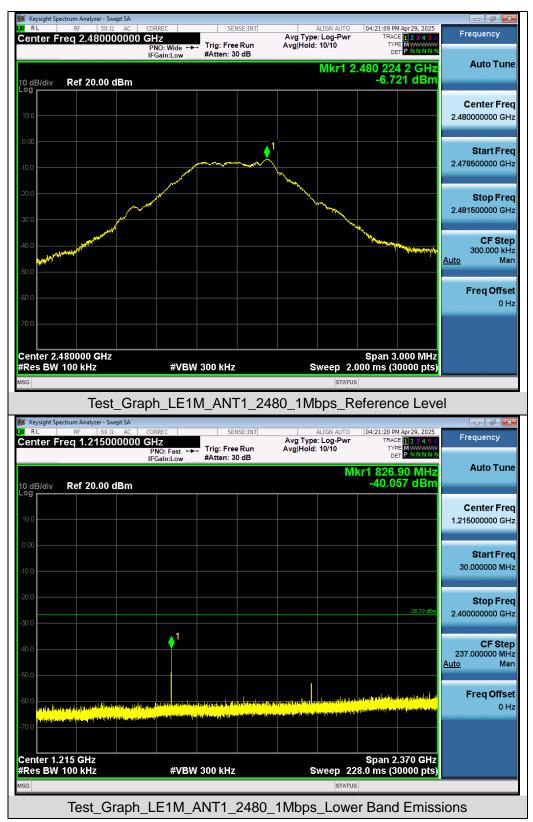






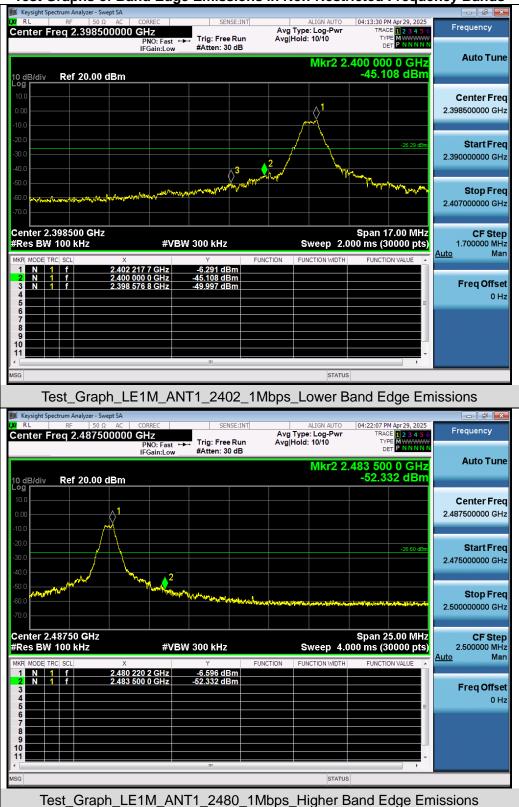








🗊 Keysight Spectrum Analyzer - Swept SA 👘 🛃						
X RL RF 50 Ω AC Center Freq 13.75000000		SE:INT AL Avg Type:		Apr 29, 2025 1 2 3 4 5 6 Frequency		
	PNO: Fast +++ Trig: Free IEGain:Low #Atten: 30		0/10 TYP			
	IFGalli:Low #/ttell: or		Mkr1 24.175	Auto Tune		
10 dB/div Ref 20.00 dBm			-47.00	67 dBm		
Log						
				Center Freq		
10.0				13.750000000 GHz		
0.00						
0.00				Start Freq		
-10.0				2.500000000 GHz		
-20.0				Stop Freq		
				-26.72 dBm 25.000000000 GHz		
-30.0						
				CF Step		
-40.0				1 2.25000000 GHz		
-50.0				Auto Man		
-30.0		and the later of the	Andrea A state and the state of			
-60.0	an the state projection of the state of the state	A DESCRIPTION OF THE OWNER OF THE	With the second seco	Freq Offset		
Alashi panakana ana ana ana ana ana ana ana ana	The second s			0 Hz		
-70.0						
Center 13.75 GHz			Snap 2	2.50 GHz		
#Res BW 100 kHz	#VBW 300 kHz	5	Sweep 2.152 s (3)	0000 pts)		
MSG STATUS						
Test_Graph_LE1M_ANT1_2480_1Mbps_Higher Band Emissions						



Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands



11. Radiated Spurious Emission

11.1 Measurement Limit

• FCC Part 15.209 Limit in the below table to be followed

Frequencies (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: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

11.2 Measurement Procedure

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds.



- 8. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 9. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 10. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 11. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

Spectrum ParameterSettingStart ~Stop Frequency9kHz~150kHz/RB 200Hz for QPStart ~Stop Frequency150kHz~30MHz/RB 9kHz for QPStart ~Stop Frequency30MHz~1000MHz/RB 120kHz for QPStart ~Stop Frequency1GHz~26.5GHz
1MHz/3MHz for Peak, 1MHz/3MHz for Average

The following table is the setting of spectrum analyzer and receiver.

Receiver Parameter	Setting
Start ~Stop Frequency	9kHz~150kHz/RB 200Hz for QP
Start ~Stop Frequency	150kHz~30MHz/RB 9kHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120kHz for QP



Quasi-Peak Measurements below 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = as shown in the table above
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

• Peak Measurements above 1GHz

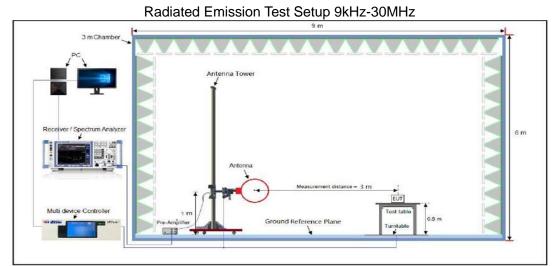
- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

• Average Measurements above 1GHz

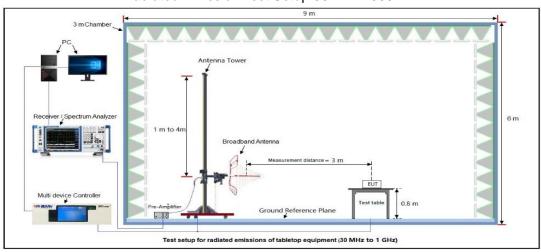
- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. $VBW \ge [3 \times RBW]$
- 4. Detector = Power averaging (rms)
- 5. Averaging type = power (i.e., rms)
- 6. Sweep time = auto
- 7. Perform a trace average of at least 100 traces.
- 8. The applicable correction factor is [10*log (1 / D)], where D is the duty cycle. The factor had been edited in the "Input Correction" of the Spectrum Analyzer.



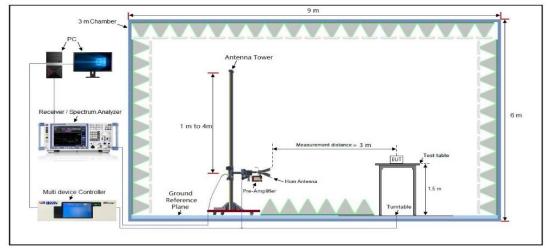
11.3 Measurement Setup (Block Diagram of Configuration)



Radiated Emission Test Setup 30MHz-1000MHz



Radiated Emission Test Setup Above 1000MHz





11.4 Measurement Result

Radiated Emission Below 30MHz

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

			Radia	ted Emiss	ion Test Res	ults at 30MHz	2-1GHz			
EUT N	lame	Labe	l Printer			Model Na	me	NIIMBOT	B1	
Tempo	erature	20.2°	С			Relative H	lumidity	53.5%		
Press	ure	960h	Pa			Test Volta	ige	DC 7.4V by battery1#		
Test N	lode	Mode	e 1			Antenna I	Polarity	Horizontal		
	72.0	dBu¥/m				·		•		
	-8 30.00	0 40		80	**************************************	300	55	Limit: Margin: 		
Final	Data List	0 40	30 00 10	00	(1112)	300	400 300 00	0 100 1000.00		
NO.	Freq. [MHz]		Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	44.743	3	19.88	13.57	40.00	20.12	100	190	Horizontal	
2	104.170	01	24.90	16.24	43.50	18.6	100	270	Horizontal	
3	192.418	36	26.04	13.63	43.50	17.46	100	100	Horizontal	
4	303.543	37	26.34	16.50	46.00	19.66	100	260	Horizontal	
5	545.182	26	33.02	23.98	46.00	12.98	100	170	Horizontal	



		Radia	ted Emiss	ion Test Res	ults at 30MH	z-1GHz			
EUT Na	me	Label Printer			Model Na	ame	NIIMBOT	31	
Temper	ature	20.2℃			Relative I	Humidity	53.5%		
Pressu	re	960hPa			Test Volta	age	DC 7.4V by battery1#		
Test Mo	de	Mode 1			Antenna	Polarity	Vertical		
	72.0 df	3uV∕m			·				
							Limit: — Margin: —		
							6		
	32					all and a second	with Hallow N		
		2 Value and a second a	3 X	hanna an	West a lot of the party	when he was a factor of the second			
	-8								
	30.000	40 50 60 70	80	(MHz)	300	400 500 60	0 700 1000.00	10	
Final Da	ata List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	32.6340	23.93	14.47	40.00	16.07	100	190	Vertical	
2	40.5591	25.48	16.91	40.00	14.52	100	110	Vertical	
3	103.442	1 24.14	14.80	43.50	19.36	100	100	Vertical	
4	309.997	7 26.45	19.60	46.00	19.55	100	260	Vertical	
5	444.851	4 30.77	25.88	46.00	15.23	100	180	Vertical	
6	945.439	9 36.12	30.78	46.00	9.88	100	170	Vertical	



				Radia	ited En	niss	ion Test Res	sult	s at 3	0MHz	-1GH	Ιz					
EUT N	lame	Label	Printe	Model Name				NIIMBOT B1			1						
Tempe	erature	20.2°C	C		Relative Humidity				53.5%								
Press	ure	960hF	⊃a				Test Voltage					DC 7.4V by battery2#			battery2#		
Test M	lode	Mode 1							Antenna Polarity					Hori	zonta	al	
	72.0	dBu∀/m															
													Lir Ma	nit: argin:	_		
	-8	petrological and the second se		4 www.yweshy 60 70	80	3	(MHz)	3X	-tople	4 ////////////////////////////////////	400	500	600	700	1000	- - - - - -	
	Data List Freq.		Leve	el	Fact	or	Limit	<u> </u>	Marg	in	H	eigh	t	Ar	ngle		Deleritu
NO.	[MHz]	[dBµV	-	[dB	•	[dBµV/m]		[dB]	[cm]		[°]		Polarity
1	43.353	84	19.2	26	13.6	57	40.00		20.7	4	-	100		1	80		Horizontal
2	106.38	50	23.0)7	16.2	26	43.50		20.4	3	-	100		2	80		Horizontal
3	216.78	28	24.5	50	14.4	2	46.00		21.5	5		100		1	60		Horizontal
4	322.18	86	30.4	17	16.5	7	46.00		15.5	3	-	100		2	10		Horizontal
5	545.18	26	32.1	4	23.9	8	46.00		13.8	6	-	100		1	20		Horizontal
6	903.30	94	37.0	00	31.3	84	46.00		9.0			100		1	00		Horizontal



		Radia	ted Emiss	ion Test Res	ults at 30MHz	-1GHz			
EUT Na	me La	abel Printer			Model Na	me	NIIMBOT B1		
Tempera	ature 2	0.2 ℃		Relative Humidi			53.5%		
Pressur	r e 90	60hPa	ige	DC 7.4V by battery2#					
Test Mo	ode Mode 1 Antenna Polarity Vertical								
	72.0 dBu	W/m							
							Limit: — Margin: —		
Final Da	-8	40 50 60 70	80	(MHz)	300	400 500 60		0	
NO.	Freq.	Level	Factor	Limit	Margin	Height	Angle	Polarity	
	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dB]	[cm]	[°]	-	
1	32.1795	25.29	14.32	40.00	14.71	100	210	Vertical	
2	64.6594	23.14	17.05	40.00	16.86	100	100	Vertical	
3	143.8295	23.81	18.20	43.50	19.69	100	190	Vertical	
4	323.3204	31.00	20.18	46.00	15.0	100	210	Vertical	
5	699.3046	33.84	28.09	46.00	12.16	100	160	Vertical	
6	948.7610	36.39	30.65	46.00	9.61	100	120	Vertical	
DECUIT			1				1		

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. All test modes had been pre-tested. The mode 1 is the worst case and recorded in the report.



EUT Name	I	abel Printer		Model Name	NIIMBOT	B1	
Temperature	. 2	2 0.2 °C		Relative Humidity			
Pressure	ç	960hPa		Test Voltage	DC 7.4V b	y battery1#	
Test Mode	I	lode 1 Antenna Polarity			Horizontal		
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	— Туре	
4804.000	50.15	0.08	50.23	74.00	-23.77	peak	
4804.000	40.77	0.08	40.85	54.00	-13.15	AVG	
7206.000	49.21	2.21	51.42	74.00	-22.58	peak	
7206.000	41.36	2.21	43.57	54.00	-10.43	AVG	
Remark:	enna Facto	r + Cable Loss – P	re-amplifier.				
Remark:		or + Cable Loss – P Label Printer	re-amplifier.	Model Name	NIIMBOT	B1	
Remark: Factor = Ant	l		re-amplifier.	Model Name Relative Humidity	NIIMBOT 53.5%	B1	
Remark: Factor = Ant EUT Name		abel Printer	re-amplifier.		53.5%	B1	
Remark: Factor = Ant EUT Name Temperature		Label Printer 20.2℃	re-amplifier.	Relative Humidity	53.5%		
Remark: Factor = Ant EUT Name Temperature Pressure		Label Printer 20.2°C 960hPa Mode 1	re-amplifier.	Relative Humidity Test Voltage	53.5% DC 7.4V b	y battery1#	
Remark: Factor = Ant EUT Name Temperature Pressure Test Mode	l 2 3 4 1 Meter	Label Printer 20.2°C 960hPa Mode 1	Emission	Relative Humidity Test Voltage Antenna Polarity	53.5% DC 7.4V b Vertical	by battery1#	
Remark: Factor = Ant EUT Name Temperature Pressure Test Mode Frequency	Meter Reading	Label Printer 20.2℃ 960hPa Mode 1 Factor	Emission	Relative Humidity Test Voltage Antenna Polarity Limits	53.5% DC 7.4V b Vertical Margin	y battery1#	
Remark: Factor = Ant EUT Name Temperature Pressure Test Mode Frequency (MHz)	Meter Reading (dBµV)	Label Printer 20.2°C 060hPa Mode 1 Factor (dB)	Emission Level (dBµV/m)	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m)	53.5% DC 7.4V b Vertical Margin (dB)	vy battery1# Value Type	
Remark: Factor = Ant EUT Name Temperature Pressure Test Mode Frequency (MHz) 4804.000	Meter Reading (dBµV) 50.69	Label Printer 20.2°C 960hPa Mode 1 Factor (dB) 0.08	Emission Level (dBµV/m) 50.77	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00	53.5% DC 7.4V b Vertical Margin (dB) -23.23	vy battery1# Value Type peak	
Remark: Factor = Ant EUT Name Temperature Pressure Test Mode Frequency (MHz) 4804.000 4804.000	 	Label Printer 20.2°C 060hPa Mode 1 Factor (dB) 0.08 0.08	Emission Level (dBµV/m) 50.77 41.44	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00 54.00	53.5% DC 7.4V b Vertical Margin (dB) -23.23 -12.56	vy battery1# Value Type peak AVG	

RESULT: PASS



EUT Name		Label F	Printer		Μ	odel Name		NIIMBOT B	1
Temperature		20.2 ℃			R	elative Humidit	у	53.5%	
Pressure		960hPa	a		Te	est Voltage		DC 7.4V by	battery1#
Test Mode		Mode 2		Antenna Polarity			Horizontal		
Frequency	Mete Readi	ing Factor Level				Limits		Margin	Value Type
(MHz)	(dBµ'	V)	(dB)	(dBµV/m)		(dBµV/m)		(dB)	туре
4880.000	50.1	7	0.14	50.31		74.00		-23.69	peak
4880.000	40.3	6	0.14	40.50		54.00		-13.50	AVG
7320.000	49.6	5	2.36	52.01		74.00		-21.99	peak
7320.000	40.5	8	2.36	42.94		54.00		-11.06	AVG
Remark:									
Factor = Ante	enna Fa	ctor + Ca	able Loss – Pr	e-amplifier.					
EUT Name		Label F	Printer		M	odel Name		NIIMBOT B	1
Temperature		20.2 ℃			R	elative Humidit	у	53.5%	
Pressure		960hPa	a		Te	est Voltage		DC 7.4V by	battery1#
Test Mode		Mode 2	2		A	ntenna Polarity		Vertical	
Frequency	Mete Readi		Factor	Emission Level		Limits		Margin	Value
(MHz)	(dBµ'	√)	(dB)	(dBµV/m)		(dBµV/m)		(dB)	Туре
4880.000	50.3	4	0.14	50.48		74.00		-23.52	peak
4880.000	41.3	9	0.14	41.53		54.00		-12.47	AVG
7320.000	48.8	7	2.36	51.23		74.00		-22.77	peak
7320.000	41.3	6	2.36	43.72		54.00		-10.28	AVG
Remark:									
Factor = Ante	enna Fa	ctor + Ca	able Loss – Pr	e-amplifier.					

RESULT: Pass



EUT Name		Label Printer			Мо	del Name	NIIMBOT B1	
Temperature		20.2 °C	2		Re	lative Humidity	53.5%	
Pressure		960hF	Pa		Tes	st Voltage	DC 7.4V by b	attery1#
Test Mode		Mode	3	Antenna Polarity			Horizontal	
Frequency	Mete Read	ing Factor Level				Limits	Margin	Value
(MHz)	(dBµ	V)	(dB)	(dBµV/m)		(dBµV/m)	(dB)	Туре
4960.000	50.1	5	0.22	50.37		74.00	-23.63	peak
4960.000	40.3	6	0.22	40.58		54.00	-13.42	AVG
7440.000	49.5	51	2.64	52.15		74.00	-21.85	peak
7440.000	40.1	5	2.64	42.79		54.00	-11.21	AVG
Remark:								
Factor = Ante	enna Fa	ctor + C	Cable Loss – Pro	e-amplifier.				
EUT Name		Label	Printer		Мо	del Name	NIIMBOT B1	
Temperature		20.2℃	2		Re	lative Humidity	53.5%	
remperature		20.2 0						
Pressure		960hF	Pa		Tes	st Voltage	DC 7.4V by b	attery1#
-		-				st Voltage tenna Polarity	DC 7.4V by b Vertical	pattery1#
Pressure	Mete	960hF Mode er		Emission Level				Value
Pressure Test Mode	Mete	960hF Mode er	3			tenna Polarity	Vertical	
Pressure Test Mode Frequency	Mete	960hF Mode er ing V)	3 Factor	Level		tenna Polarity Limits	Vertical Margin	Value
Pressure Test Mode Frequency (MHz)	Mete Read (dBµ	960hF Mode er ing V)	3 Factor (dB)	Level (dBµV/m)		Limits	Vertical Margin (dB)	Value Type
Pressure Test Mode Frequency (MHz) 4960.000	Mete Read (dBµ 49.8	960hF Mode er ing V) 55	3 Factor (dB) 0.22	Level (dBµV/m) 50.07		Limits (dBµV/m) 74.00	Vertical Margin (dB) -23.93	Value Type peak
Pressure Test Mode Frequency (MHz) 4960.000 4960.000	Mete Read (dBµ 49.8 41.3	960hF Mode er ing V) 55 11 55	3 Factor (dB) 0.22 0.22	Level (dBµV/m) 50.07 41.53		Limits (dBµV/m) 74.00 54.00	Vertical Margin (dB) -23.93 -12.47	Value Type peak AVG
Pressure Test Mode Frequency (MHz) 4960.000 4960.000 7440.000	Mete Read (dBµ 49.8 41.3 49.8	960hF Mode er ing V) 55 11 55	3 Factor (dB) 0.22 0.22 2.64	Level (dBµV/m) 50.07 41.53 52.49		Limits (dBµV/m) 74.00 54.00 74.00	Vertical Margin (dB) -23.93 -12.47 -21.51	Value Type peak AVG peak
Pressure Test Mode Frequency (MHz) 4960.000 4960.000 7440.000 Remark:	Mete Read (dBµ 49.8 41.3 49.8 40.3	960hF Mode er ing V) 55 51 55 55 56	3 Factor (dB) 0.22 0.22 2.64	Level (dBµV/m) 50.07 41.53 52.49 43.00		Limits (dBµV/m) 74.00 54.00 74.00	Vertical Margin (dB) -23.93 -12.47 -21.51	Value Type peak AVG peak

RESULT: Pass



EUT Name		Label Printer		Model Name	NIIMBOT	B1
Temperature	•	20.2 ℃		Relative Humidity53.5%		
Pressure		960hPa		Test Voltage	y battery2#	
Test Mode		Mode 1		Antenna Polarity	Horizontal	
Frequency	Meter Reading	Factor	Emission Level	Limits Margin		Value
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	— Туре
4804.000	51.37	0.08	51.45	74.00	-22.55	peak
4804.000	40.52	0.08	40.6	54.00	-13.40	AVG
7206.000	49.31	2.21	51.52	74.00	-22.48	peak
7206.000	41.52	2.21	43.73	54.00	-10.27	AVG
Remark:						
Factor = Ante	enna Fact	or + Cable Loss – P	re-amplifier.			
Factor = Ante		or + Cable Loss – P Label Printer	re-amplifier.	Model Name	NIIMBOT	B1
			re-amplifier.	Model Name Relative Humidity	NIIMBOT 53.5%	B1
EUT Name	•	Label Printer	re-amplifier.		53.5%	B1 by battery2#
EUT Name Temperature	9	Label Printer 20.2℃	re-amplifier.	Relative Humidity	53.5%	
EUT Name Temperature Pressure	9	Label Printer 20.2°C 960hPa Mode 1	re-amplifier.	Relative Humidity Test Voltage	53.5% DC 7.4V b	y battery2#
EUT Name Temperature Pressure Test Mode	Meter	Label Printer 20.2°C 960hPa Mode 1 Factor	Emission	Relative Humidity Test Voltage Antenna Polarity	53.5% DC 7.4V b Vertical	by battery2#
EUT Name Temperature Pressure Test Mode Frequency	Meter	Label Printer 20.2°C 960hPa Mode 1 Factor	Emission	Relative Humidity Test Voltage Antenna Polarity Limits	53.5% DC 7.4V b Vertical Margin	y battery2#
EUT Name Temperature Pressure Test Mode Frequency (MHz)	Meter Reading (dBµV)	Label Printer 20.2°C 960hPa Mode 1 Factor (dB)	Emission Level (dBµV/m)	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m)	53.5% DC 7.4V b Vertical Margin (dB)	vy battery2# Value Type
EUT Name Temperature Pressure Test Mode Frequency (MHz) 4804.000	Meter Reading (dBµV) 52.01	Label Printer 20.2°C 960hPa Mode 1 Factor (dB) 0.08	Emission Level (dBµV/m) 52.09	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00	53.5% DC 7.4V b Vertical Margin (dB) -21.91	v battery2# Value Type peak
EUT Name Temperature Pressure Test Mode Frequency (MHz) 4804.000 4804.000	Meter Reading (dBµV) 52.01 41.36	Label Printer 20.2°C 960hPa Mode 1 Factor (dB) 0.08 0.08	Emission Level (dBµV/m) 52.09 41.44	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00 1 54.00 1	53.5% DC 7.4V b Vertical Margin (dB) -21.91 -12.56	Value Type peak AVG
EUT Name Temperature Pressure Test Mode Frequency (MHz) 4804.000 4804.000 7206.000 7206.000 Remark:	Meter Reading (dBµV) 52.01 41.36 49.35 40.57	Label Printer 20.2°C 960hPa Mode 1 Factor (dB) 0.08 0.08 2.21	Emission Level (dBµV/m) 52.09 41.44 51.56 42.78	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00 54.00 74.00	53.5% DC 7.4V b Vertical Margin (dB) -21.91 -12.56 -22.44	Value Type peak AVG peak

RESULT: PASS



EUT Name		Label P	rinter		Model Name	NIIMBOT B	1	
Temperature	•	20.2 ℃			Relative Humidity	53.5%		
Pressure		960hPa	l		Test Voltage	DC 7.4V by	DC 7.4V by battery2#	
Test Mode		Mode 2		Antenna Polarity	Horizontal			
				·				
Frequency	Mete Readi	-	Factor	Emission Level	Limits	Margin	Value	
(MHz)	(dBµ\	/)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	— Туре	
4880.000	50.7	7	0.14	50.91	74.00	-23.09	peak	
4880.000	40.3	6	0.14	40.50	54.00	-13.50	AVG	
7320.000	49.3	1	2.36	51.67	74.00	-22.33	peak	
7320.000	40.7	7	2.36	43.13	54.00	-10.87	AVG	
Remark:								
Factor = Ante	enna Fa							
	enna Fa	ctor + Cal			Model Name	NIIMBOT B	1	
Factor = Ante					Model Name Relative Humidity	NIIMBOT B	1	
Factor = Ante		Label P	rinter					
Factor = Ante EUT Name Temperature		Label P 20.2℃	rinter		Relative Humidity	53.5%		
Factor = Ante EUT Name Temperature Pressure		Label P 20.2°C 960hPa Mode 2	rinter		Relative Humidity Test Voltage	53.5% DC 7.4V by	battery2#	
Factor = Ante EUT Name Temperature Pressure Test Mode	Mete	Label P 20.2°C 960hPa Mode 2 rr ng	rinter	Emission	Relative Humidity Test Voltage Antenna Polarity	53.5% DC 7.4V by Vertical	battery2#	
Factor = Anternational Factor = Anternational Factor = Anternational Frequency Frequency	e Mete Readi	Label P 20.2 °C 960hPa Mode 2 or ng /)	Factor	Emission Level	Relative Humidity Test Voltage Antenna Polarity Limits	53.5% DC 7.4V by Vertical Margin	battery2#	
Factor = Anto EUT Name Temperature Pressure Test Mode Frequency (MHz)	Mete Readi (dBµ ¹	Label P 20.2°C 960hPa Mode 2 rr ng /) 6	rinter Factor (dB)	Emission Level (dBµV/m)	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m)	53.5% DC 7.4V by Vertical Margin (dB)	battery2# Value Type	
Factor = Anternational Factor = Anternational Fermional Frequency (MHz) 4880.000	Mete Readi (dBµ ¹ 51.3	Label P 20.2℃ 960hPa Mode 2 or ng /) 6 1	rinter Factor (dB) 0.14	Emission Level (dBµV/m) 51.50	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00	53.5% DC 7.4V by Vertical Margin (dB) -22.50	battery2#	
Factor = Anter EUT Name Femperature Pressure Fest Mode Frequency (MHz) 4880.000 4880.000	Mete Readi (dBµ [\] 51.3 41.3	Label P 20.2°C 960hPa Mode 2 rng /) 6 1 7	Factor (dB) 0.14 0.14	Emission Level (dBµV/m) 51.50 41.45	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00 54.00	53.5% DC 7.4V by Vertical Margin (dB) -22.50 -12.55	battery2# Value Type peak AVG	
Factor = Anternational Factor = Anternational Fermional Frequency (MHz) 4880.000 7320.000	Mete Readi (dBµ\ 51.3 41.3 49.3	Label P 20.2°C 960hPa Mode 2 rng /) 6 1 7	rinter Factor (dB) 0.14 0.14 2.36	Emission Level (dBµV/m) 51.50 41.45 51.73	Relative Humidity Test Voltage Antenna Polarity Limits (dBµV/m) 74.00 54.00 74.00	53.5% DC 7.4V by Vertical Margin (dB) -22.50 -12.55 -22.27	battery2# Value Type peak AVG peak	

RESULT: Pass



Reading Reading (MHz) (dBµV) (d 4960.000 50.17 0. 4960.000 40.35 0. 7440.000 49.31 2.	actor Emission Level dB) (dBµV/m 22 50.39 22 40.57 64 51.95 64 51.95 64 44.22 Loss – Pre-amplifier.	Te Ar	elative Humidity est Voltage ntenna Polarity Limits (dBµV/m) 74.00 54.00 74.00 54.00	53.5% DC 7.4V by ba Horizontal Margin (dB) -23.61 -13.43 -22.05 -9.78	Value Type peak AVG AVG
Test Mode Mode 3 Frequency Meter Reading Fa (MHz) (dBµV) (d 4960.000 50.17 0. 4960.000 40.35 0. 7440.000 49.31 2. 7440.000 41.58 2. Remark: Factor = Antenna Factor + Cable L	Actor Level dB) (dBµV/m .22 50.39 .22 40.57 .64 51.95 .64 44.22	A r	Limits (dBµV/m) 74.00 54.00 74.00	Horizontal Margin (dB) -23.61 -13.43 -22.05	Value Type peak AVG peak
Frequency Meter Reading Fa (MHz) (dBµV) (c 4960.000 50.17 0. 4960.000 40.35 0. 7440.000 49.31 2. 7440.000 41.58 2. Remark: Factor = Antenna Factor + Cable L	Actor Level dB) (dBµV/m .22 50.39 .22 40.57 .64 51.95 .64 44.22	n	Limits (dBµV/m) 74.00 54.00 74.00	Margin (dB) -23.61 -13.43 -22.05	Type peak AVG peak
Frequency Reading Fa (MHz) (dBµV) (c 4960.000 50.17 0. 4960.000 40.35 0. 7440.000 49.31 2. 7440.000 41.58 2. Remark: Factor = Antenna Factor + Cable L	Actor Level dB) (dBµV/m .22 50.39 .22 40.57 .64 51.95 .64 44.22		(dBµV/m) 74.00 54.00 74.00	(dB) -23.61 -13.43 -22.05	Type peak AVG peak
Frequency Reading Fa (MHz) (dBµV) (c 4960.000 50.17 0. 4960.000 40.35 0. 7440.000 49.31 2. 7440.000 41.58 2. Remark: Factor = Antenna Factor + Cable L	Actor Level dB) (dBµV/m .22 50.39 .22 40.57 .64 51.95 .64 44.22		(dBµV/m) 74.00 54.00 74.00	(dB) -23.61 -13.43 -22.05	Type peak AVG peak
4960.000 50.17 0. 4960.000 40.35 0. 7440.000 49.31 2. 7440.000 41.58 2. Remark: Factor = Antenna Factor + Cable L	.22 50.39 .22 40.57 .64 51.95 .64 44.22)	74.00 54.00 74.00	-23.61 -13.43 -22.05	peak AVG peak
4960.000 40.35 0. 7440.000 49.31 2. 7440.000 41.58 2. Remark: Factor = Antenna Factor + Cable L	.22 40.57 .64 51.95 .64 44.22		54.00 74.00	-13.43 -22.05	AVG peak
7440.000 49.31 2. 7440.000 41.58 2. Remark: Factor = Antenna Factor + Cable L	.64 51.95 .64 44.22		74.00	-22.05	peak
7440.000 41.58 2. Remark:	.64 44.22				•
Remark: Factor = Antenna Factor + Cable L			54.00	-9.78	AVG
Factor = Antenna Factor + Cable L	Loss – Pre-amplifier.				_
	Loss – Pre-amplifier.				
FUT Name Label Drinto					
	er	Mo	odel Name	NIIMBOT B1	
Temperature20.2℃		Re	elative Humidity	53.5%	
Pressure 960hPa		Те	est Voltage	DC 7.4V by ba	ittery2#
Test Mode Mode 3		An	ntenna Polarity	Vertical	
Frequency Meter Fa	actor Emission	n	Limits	Margin	Value
(MHz) (dBµV) (c	dB) (dBµV/m)	(dBµV/m)	(dB)	Туре
4960.000 49.15 0.	.22 49.37		74.00	-24.63	peak
4960.000 40.58 0.	.22 40.80		54.00	-13.20	AVG
7440.000 49.37 2.	.64 52.01		74.00	-21.99	peak
7440.000 39.14 2.	.64 41.78		54.00	-12.22	AVG
Remark:					
Factor = Antenna Factor + Cable L	Loss – Pre-amplifier.				

RESULT: Pass

Note:

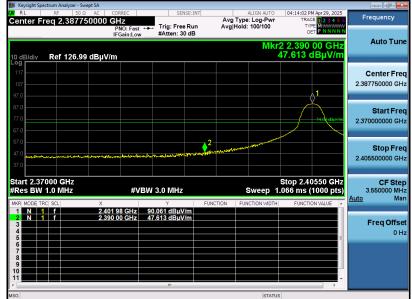
- 1. The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.
- 2. Factor = Antenna Factor + Cable loss Pre-amplifier gain, Margin = Emission Level-Limit.
- 3. The "Factor" value can be calculated automatically by software of measurement system.



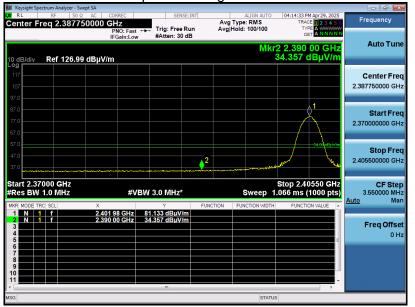
Band Edge Emission Test Results for Restricted Ban	ds
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EUT Name	Label Printer	Model Name	NIIMBOT B1
Temperature	25 ℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna Polarity	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS



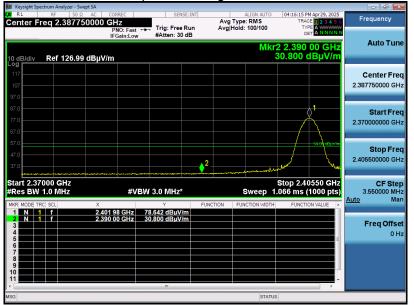
Band Edge Emission Test Results for Restricted Bands

EUT Name	Label Printer	Model Name	NIIMBOT B1
Temperature	25 ℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna Polarity	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



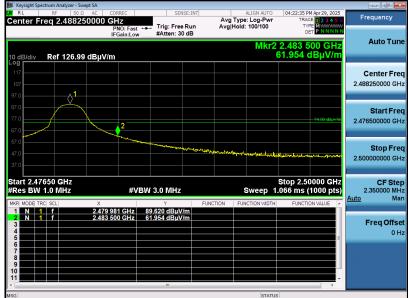
RESULT: PASS



Band Edge Emission Test Results for Restricted Bands

EUT Name	Label Printer	Model Name	NIIMBOT B1
Temperature	25 ℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna Polarity	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS



EUT Name	Label Printer	Model Name	NIIMBOT B1
Temperature	25 ℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna Polarity	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement Frequency enter Freq 2.488250000 GHz Avg Type: RMS Avg Hold: 100/100 PNO: Fast IFGain I Trig: Free Run #Atten: 30 dB Auto Tune Ref 126.99 dBµV/m Center Freq 2.488250000 GH Start Freq 2.476500000 GH Stop Freq 2 500000000 GHz Stop 2.50000 GHz 1.066 ms (1000 pts) Start 2.47650 GHz #Res BW 1.0 MHz CF Step 2.350000 MHz #VBW 3.0 MHz* Sweep Auto Mar 2.479 911 GHz 2.483 500 GHz 77.633 dBµ\ 34.281 dBµ\ Freq Offset 0 Hz

RESULT: PASS

Note: The factor had been edited in the "Input Correction" of the Spectrum Analyzer.



12. AC Power Line Conducted Emission Test

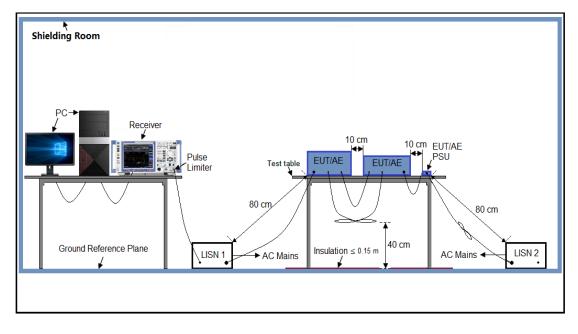
12.1 Measurement Limit

Frequency	Maximum RF Line Voltage		
Frequency	Q.P. (dBµV)	Average (dBµV)	
150kHz~500kHz	66-56	56-46	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

Note:

- 1. The lower limit shall apply at the transition frequency.
- 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

12.2 Measurement Setup (Block Diagram of Configuration)





12.3 Preliminary Procedure of Line Conducted Emission Test

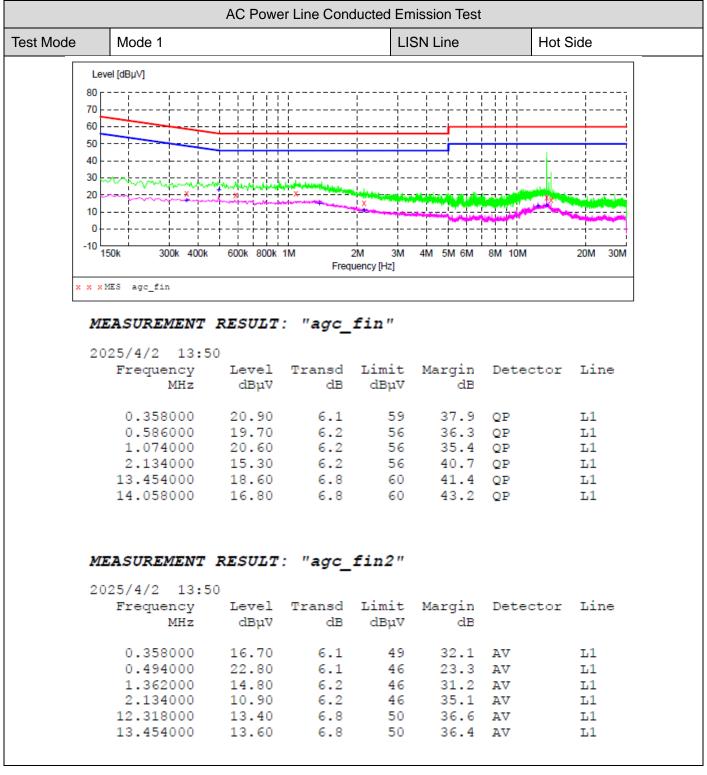
- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipment received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side).
- Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 8. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 9. During the above scans, the emissions were maximized by cable manipulation.
- 10. The test mode(s) were scanned during the preliminary test.
- 11. Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

12.4 Final Procedure of Line Conducted Emission Test

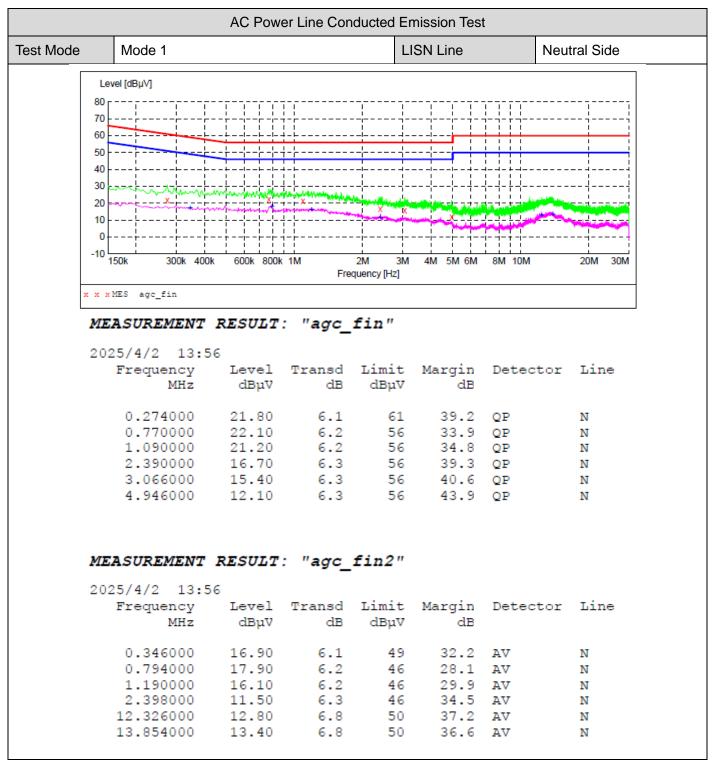
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- 3. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 4. The test data of the worst case condition(s) was reported on the Summary Data page.
- 5. A conducted emission is calculated by the following equation:
 - Measurement Level (dBµV) = Receiver reading (dBµV) + Transd (dB)
 - Transd (dB)= AMN Factor(dB)+Cable Loss(dB)+Attenuation(dB)
 - Margin= Limit-Level

12.5 Measurement Result

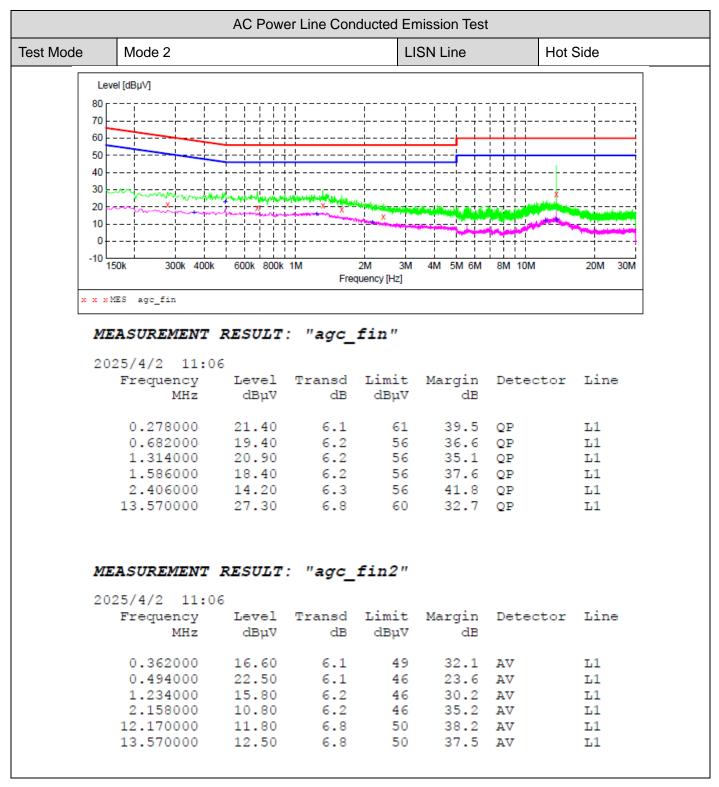




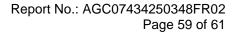


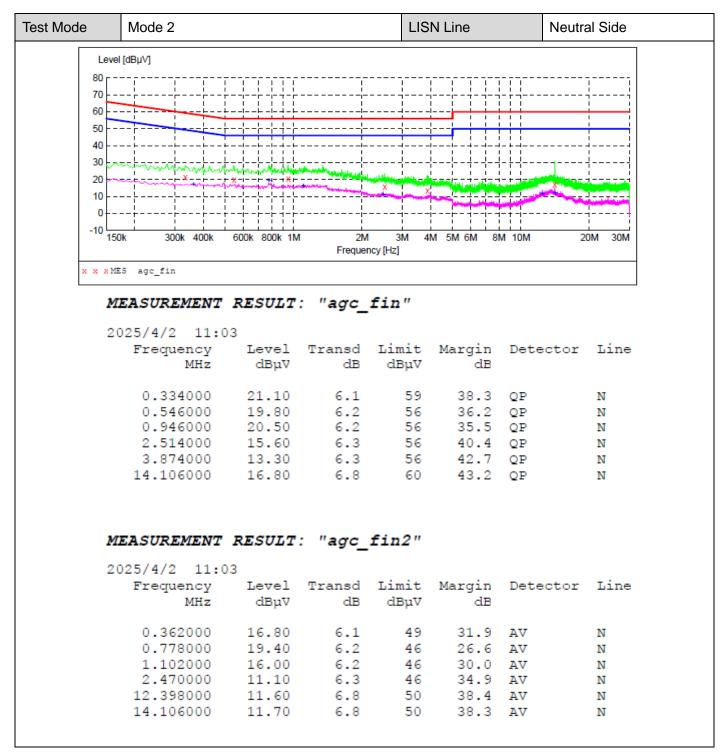






AC Power Line Conducted Emission Test





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Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc01@agccert.com.

 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

 Tel: +86-755 2523 4088
 E-mail: agc@agccert.com



Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC07434250348AP03

Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC07434250348AP04



Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders. 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

-----End of Report-----