

JAPAN MIC TEST REPORT

Project No. : DST-21R-0021

Test Report No. : DST-21R-0021

Applicant : **SHARP CORPORATION**
2-13-1, HACHIHONMATSU-IIDA, HIGASHI-HIROSHIMA-SHI
HIROSHIMA PREFECTURE 739-0192, JAPAN

Manufacturer : **INNOVATIVE MANUFACTURING SOLUTIONS VIETNAM COMPANY LIMITED**
No.12, Road 2, VSIP Nghe An Industrial Park, Hung Tay Commune, Hung Nguyen
District, Nghe An Province, Vietnam

Product name : SHARP MEDICAL LISTENING PLUG

Model name : **MH-L1-B**
(Please see P6 for all the model numbers)

Date of receipt : February 26, 2021

Date of issue : June 16, 2021

Test Result : PASS ☒ FAIL ☐

The results in this report are applicable only to the equipment tested.

This report shall not be re-produced except in full without the written approval of DSTech Co., Ltd.

This test report is prepared according to the requirements of ISO / IEC 17025

Tested by : Seongjoon, Ahn / Testing Engineer

Reviewed by: Gweon, Hur / Chief Engineer

DSTech Co., Ltd.

Revision History of Report

Rev.	Revisions	Effect page	Reviewed by	Date
-	Initial issue	All	Gweon, Hur	June 16, 2021

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1 Summary of Test

Purpose of test:

Ordinance on Technical Standards Conformity Certification of Specified Radio Equipment
2.4GHz Band wide band low power data communication System

Standards:

Certification Ordinance Article 2 Clause 1 Item19

Test Methods:

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

List of applied test to the EUT

No	Classification of EUT	Condition	Result
1	Frequency Tolerance	Conducted	PASS
2	Occupied Bandwidth	Conducted	PASS
3	Spread Bandwidth	Conducted	PASS
4	Transmitter spurious emissions	Conducted	PASS
5	Antenna power	Conducted	PASS
6	Receiver spurious emissions	Conducted	PASS
7	Dwell time	Conducted	PASS
8	Anti-Interference	Conducted	PASS

2 Facilities and accreditations

2.1. Facilities

25, 2565beon-gil, jungbu-daero, Yangji-myun, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17162
TEL : 82-31-336-1798, FAX : 82-31-336-3451

2.2 Certified

KOLAS: Registration No.: KT838
VCCI Site Registration No.: R-20066, T-20042, C-20043, G-20069
RRA: Registration No.: KR 0168

2.2. List of test and measurement instruments

USE	Equipment	Company	Model No.	Serial No.	Cal. Date	Cal. Interval	Calibrated by
X	SIGNAL ANALYZER	ROHDE&SCHWARZ	FSV13	101496	2020.06.29	1 year	HCT Co.,Ltd.
	UNIVERSAL COUNTER	Agilent	53131A	KR01206279	2020.07.01	1 year	HCT Co.,Ltd.
	SYNTHESIZED SIGNAL GENERATOR	ANRITSU	68367C	#012926	2020.07.01	1 year	HCT Co.,Ltd.
	MODULATION ANALYZER	H.P	8901B	3005A02523	2020.06.30	1 year	HCT Co.,Ltd.
	SIGNAL GENERATOR	Agilent	E4438C	MY47271725	2020.06.29	1 year	HCT Co.,Ltd.
X	USB WIDEBAND POWER SENSOR	KEYSIGHT	U2021XA	MY56040015	2020.06.30	1 year	HCT Co.,Ltd.
	15 MHz FUNCTION/ARBITRARY WAVEFORM GENERATOR	H.P	33120A	US36024435	2020.06.29	1 year	HCT Co.,Ltd.
X	Hygro/Thermo Graph	CAS	T004	-	2020.08.15	1 year	HCT Co.,Ltd.
	Attenuator (10dB)	Agilent	8493C	16219	2021.01.18	1 year	SICT Co.,Ltd.
	Attenuator (20dB)	Agilent	8491B	27488	2021.01.18	1 year	SICT Co.,Ltd.
X	DC Power supply	Agilent	E3631A	MY40012658	2021.01.18	1 year	SICT Co.,Ltd.
X	Bluetooth Tester	TESCOM	TC-3000B	3000B690131	2020.10.30	1 year	HCT Co.,Ltd.

c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated

3 EUT(Equipment Under Test) Information

Product: SHARP MEDICAL LISTENING PLUG
Model: MH-L1-B
Serial number: None (prototype)

Model differences:

Model name	Difference	Tested (checked)
MH-L1-B	Original	☒

Note: All the differences were compared with the test sample

Technical data:

Operating frequency range:	2402 MHz ~ 2480 MHz			
Type of modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK / GFSK			
Type of emission:	F1D, G1D / F1D			
Type of Antenna	PCB antenna : -2.2 dBi (Right) / -2.0 dBi (Left)			
RF output power:	BDR/EDR mode F1D,G1D: 0.00012(Normal)-0.00048(AFH) W/MHz BLE mode - LE (1 Mbps) GFSK modulation (F1D): 0.007 W - LE (2 Mbps) GFSK modulation (F1D): 0.007 W			
Number of Channels:	79 channels (channel spacing: 1 MHz) / 40 channels (channel spacing:2 MHz)			
Power source:*	Nominal:	Voltage (normal):	Extreme upper Voltage:	Extreme lower Voltage:
	DC 3.7 V	DC 3.7 V	DC 4.2 V	DC 3.33 V
S/W Version	V0.10.7			
H/W Version	DV1-2			
Connection to PSTN:	No			

Note: .The test were performed at each voltage(battery input terminal)

I/O port	Type	Q'ty	Remark
-	-		

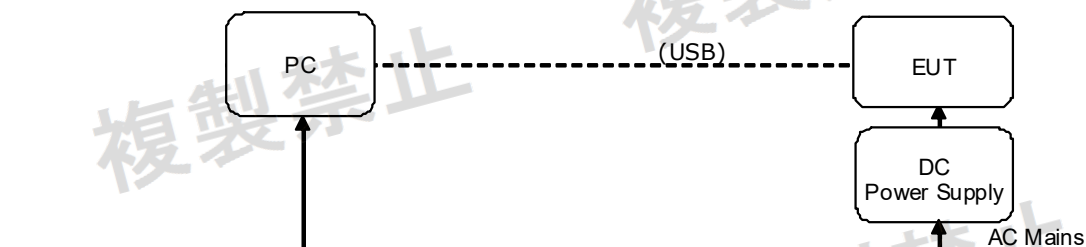
EUT Modifications

- None

4 Test and measurement conditions

4.1. Test configuration (arrangement of EUT)

The measurements were taken in continuous transmitting/receiving mode using the TEST MODE.



The measurements were taken in TEST MODE provided by the applicant for controlling the EUT.

- Test software installed in the EUT: QUALCOMM Blue Test3.2.0

4.2. Description of support units (accessory equipment)

The following support units or accessories were used to form a representative test configuration during the tests.

#	Equipment	Manufacturer	Model No.	Serial No.
1	NotePC	H.P	TPN-C129	CND80962L4
			-	-

4.3. Interconnection and I/O cables

The following support units or accessories were used to form a representative test configuration during the tests.

#	Start		End		Cable	
	Name	I/O port	Name	I/O port	length (m)	shielded (Y/N)
1	EUT	DC IN	DC power supply	DC OUT	1.2	N
2	DC power supply	AC IN	AC mains	AC mains	1.8	N

- Note:**
- 1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
 - 2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4. Measurement Uncertainty (U)

Refer to Measurement Results (The confidence level is 95 %, $k = 2$)

4.5. Test Date

Date Tested	February 26, 2021 – March 9, 2021
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5 Measurement results (BDR/EDR) (Left Earphone)

5.1. Frequency tolerance

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.1.1 Test Data

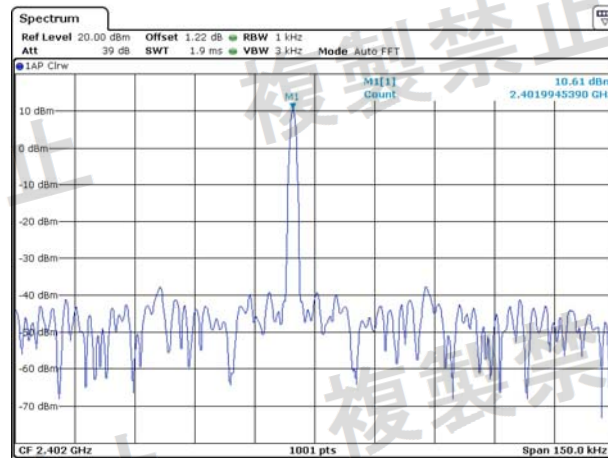
PASS

Test Conditions (Conducted)			TEST RESULTS		
Temperature:		(25 ± 3) °C			
Rel. Humidity:		(52 ± 3) % R.H.			
Basic			Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low	V _{MAX}	DC 4.20 V			
Frequency: 2402 MHz	V _{NOM}	DC 3.70 V	2.4019945260	-2.28	± 50
	V _{MIN}	DC 3.33 V	2.4019945390	-2.27	
	V _{MIN}	DC 3.33 V	2.4019945307	-2.28	
Middle Frequency: 2441 MHz	V _{MAX}	DC 4.20 V	2.4409944339	-2.28	
	V _{NOM}	DC 3.70 V	2.4409944386	-2.28	
	V _{MIN}	DC 3.33 V	2.4409944408	-2.28	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	2.4799944049	-2.26	
	V _{NOM}	DC 3.70 V	2.4799944002	-2.26	
	V _{MIN}	DC 3.33 V	2.4799944220	-2.25	
EDR					
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	2.4019762694	-9.88	± 50
	V _{NOM}	DC 3.70 V	2.4019757842	-10.08	
	V _{MIN}	DC 3.33 V	2.4019756523	-10.14	
Middle Frequency: 2441 MHz	V _{MAX}	DC 4.20 V	2.4409749360	-10.27	
	V _{NOM}	DC 3.70 V	2.4409748886	-10.29	
	V _{MIN}	DC 3.33 V	2.4409748744	-10.29	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	2.4799744304	-10.31	
	V _{NOM}	DC 3.70 V	2.4799744300	-10.31	
	V _{MIN}	DC 3.33 V	2.4799744406	-10.31	
Measurement uncertainty: ± 2 × 10 ⁻⁷					

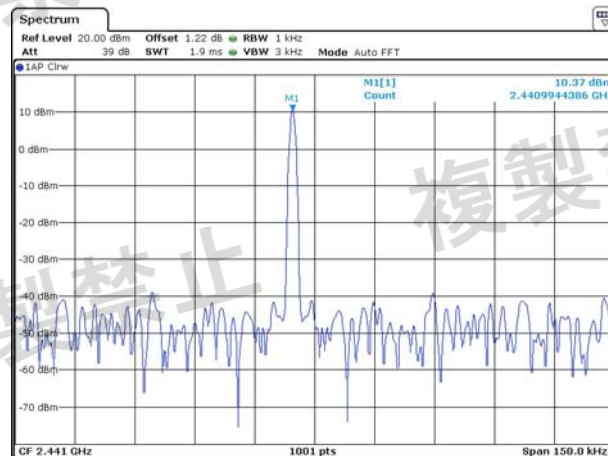
5.1.2 Test Plot (Normal Voltage)

Basic

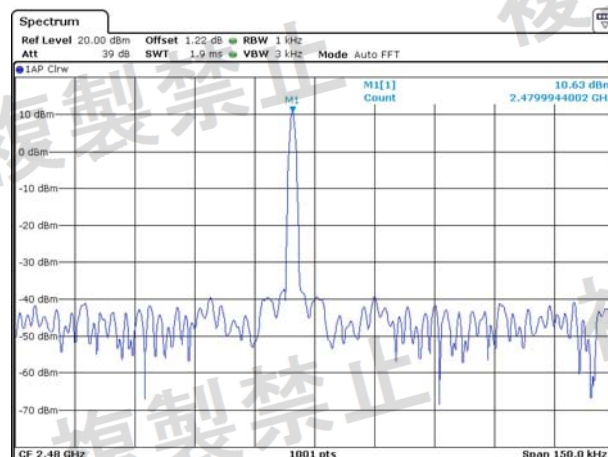
Low Channel
(2402 MHz)



Middle Channel
(2441 MHz)

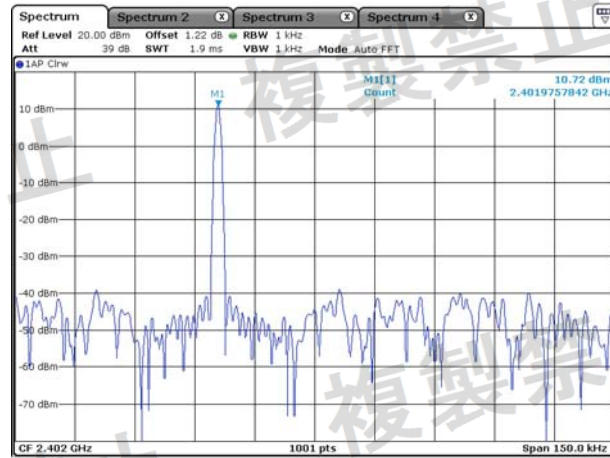


High Channel
(2480 MHz)

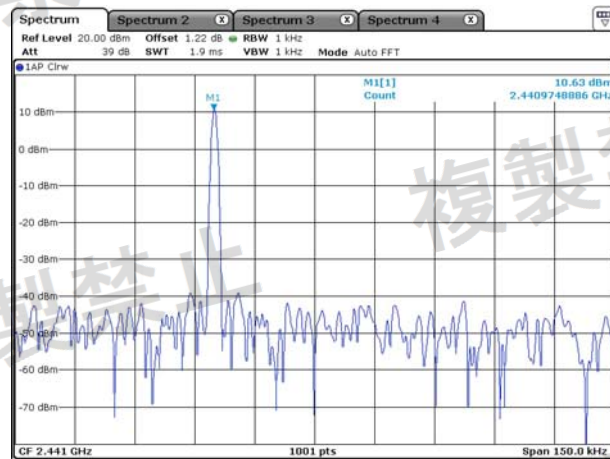


EDR

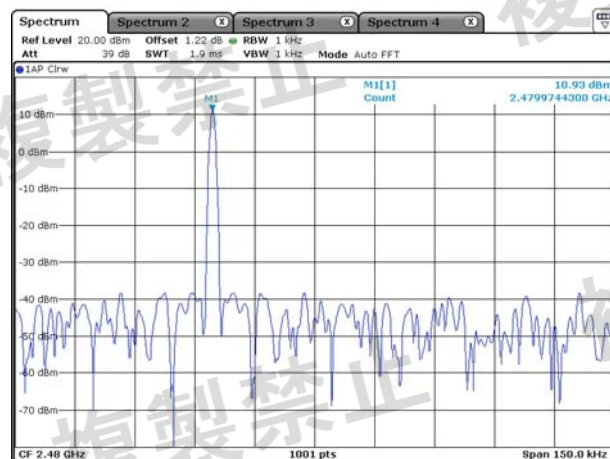
Low Channel
(2402 MHz)



Middle Channel
(2441 MHz)



High Channel
(2480 MHz)



5.2. Occupied bandwidth (99%) and Spreading bandwidth (90%)

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5.2.1 Test Data

PASS

Test Conditions (Conducted)					
Temperature: (25 ± 3) °C			TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.			Occupied bandwidth (MHz)	Spreading bandwidth (MHz)	Limit
Basic, GFSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	78.12	71.43	83.5MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.12	71.43	
	V _{MIN}	DC 3.33 V	78.22	71.43	
AFH	V _{MAX}	DC 4.20 V	19.57	17.98	
	V _{NOM}	DC 3.70 V	19.54	18.07	
	V _{MIN}	DC 3.33 V	19.54	18.01	
EDR, π/4-DQPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	78.42	71.43	83.5MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.32	71.43	
	V _{MIN}	DC 3.33 V	78.32	71.53	
AFH	V _{MAX}	DC 4.20 V	19.96	18.16	
	V _{NOM}	DC 3.70 V	19.96	18.19	
	V _{MIN}	DC 3.33 V	19.96	18.19	
EDR, 8DPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	78.32	71.43	83.5MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.42	71.53	
	V _{MIN}	DC 3.33 V	78.42	71.53	
AFH	V _{MAX}	DC 4.20 V	19.93	18.16	
	V _{NOM}	DC 3.70 V	19.96	18.19	
	V _{MIN}	DC 3.33 V	19.96	18.22	
Measurement uncertainty: ± 3 × 10 ⁻⁴					

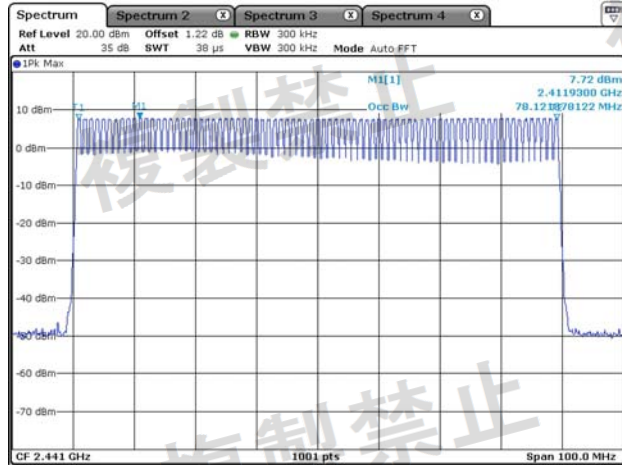
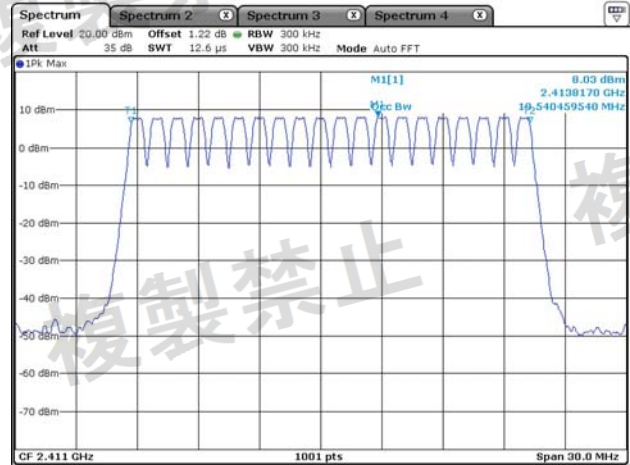
5.2.2 Test Plot (Normal Voltage)

Occupied bandwidth (99%)

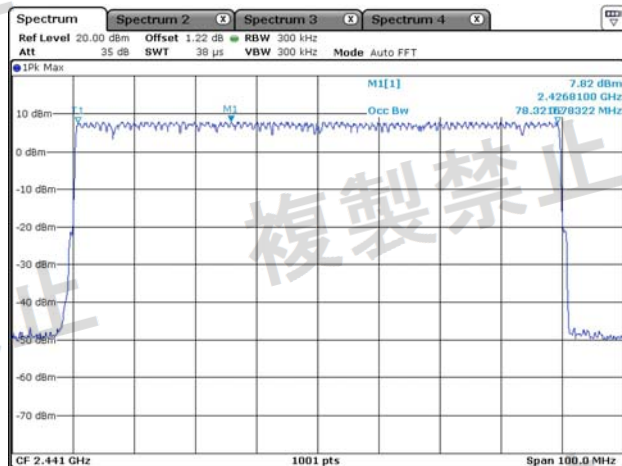
Normal Hopping,

Basic, GFSK modulation

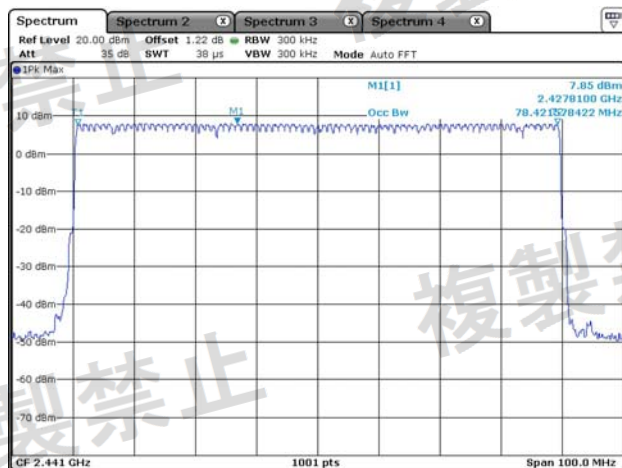
AFH



EDR, $\pi/4$ -DQPSK modulation



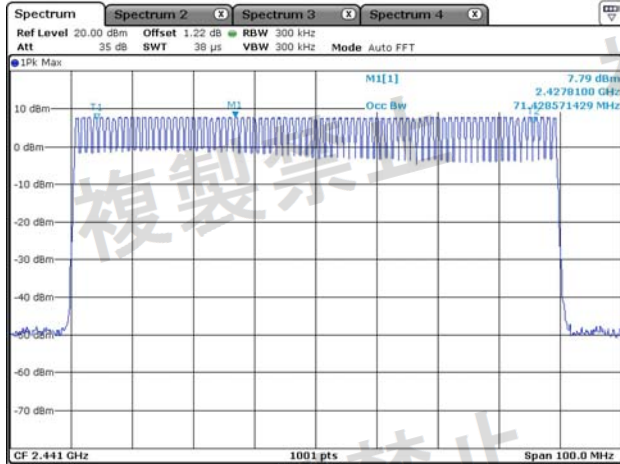
EDR, 8DPSK modulation



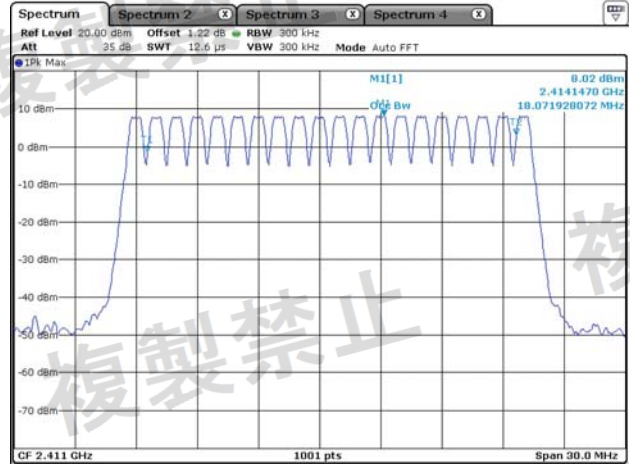
Spreading bandwidth (90 %)

Normal Hopping

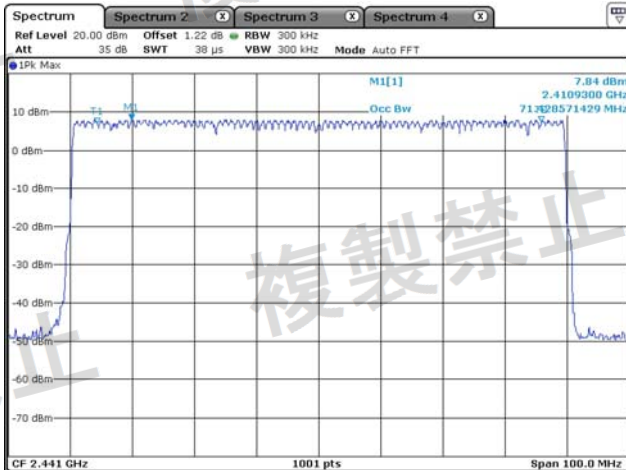
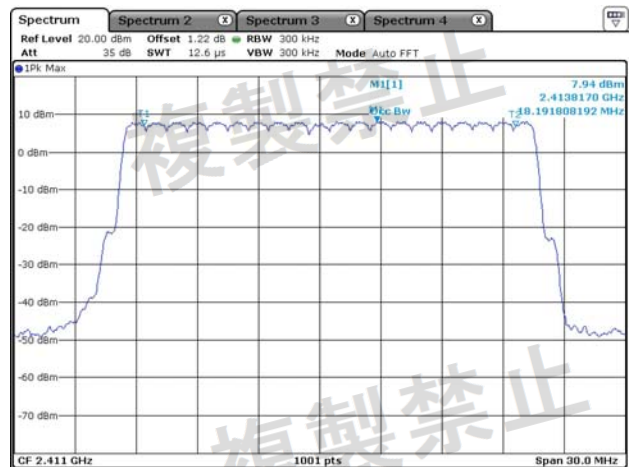
Basic, GFSK modulation



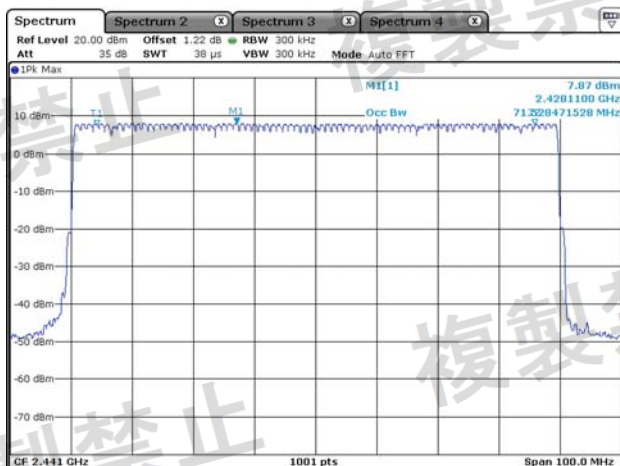
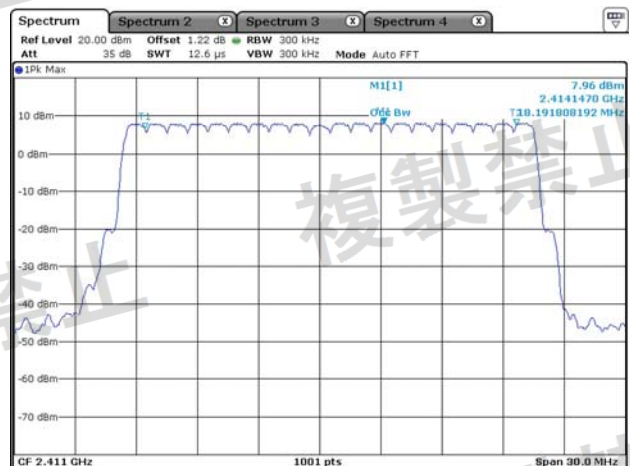
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



5.3. Antenna power

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5.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):			F1D,G1D: 0.00012(Normal)-0.00048(AFH) W/MHz			
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (52 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW/MHz) (NOTE1)	Tolerance (%) (NOTE2)	Limit
Basic, GFSK modulation						
Normal hopping	V _{MAX}	DC 4.20 V	8.33	0.12410	3.41	(Antenna Power) 3 mW/MHz or less/
	V _{NOM}	DC 3.70 V	8.30	0.12324	2.70	
	V _{MIN}	DC 3.33 V	8.36	0.12496	4.13	
AFH	V _{MAX}	DC 4.20 V	8.33	0.49326	2.76	(tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.26	0.48315	0.66	
	V _{MIN}	DC 3.33 V	8.33	0.49264	2.63	
EDR, π/4-DQPSK modulation						
Normal hopping	V _{MAX}	DC 4.20 V	8.34	0.12455	3.79	(Antenna Power) 3 mW/MHz or less
	V _{NOM}	DC 3.70 V	8.33	0.12426	3.55	
	V _{MIN}	DC 3.33 V	8.33	0.12409	3.41	
AFH	V _{MAX}	DC 4.20 V	8.32	0.48680	1.42	(tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.35	0.48936	1.95	
	V _{MIN}	DC 3.33 V	8.35	0.48936	1.95	
EDR, 8DPSK modulation						
Normal hopping	V _{MAX}	DC 4.20 V	8.32	0.12397	3.30	(Antenna Power) 3 mW/MHz or less
	V _{NOM}	DC 3.70 V	8.29	0.12294	2.45	
	V _{MIN}	DC 3.33 V	8.29	0.12294	2.45	
AFH	V _{MAX}	DC 4.20 V	8.29	0.48178	0.37	(tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.28	0.47988	-0.03	
	V _{MIN}	DC 3.33 V	8.27	0.47798	-0.42	
Measurement uncertainty: ± 1.4 dB						

** Measured value (dBm) is the average output power of the transmitter; the power meter reading and corrected for the cable loss. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the peak power meter.

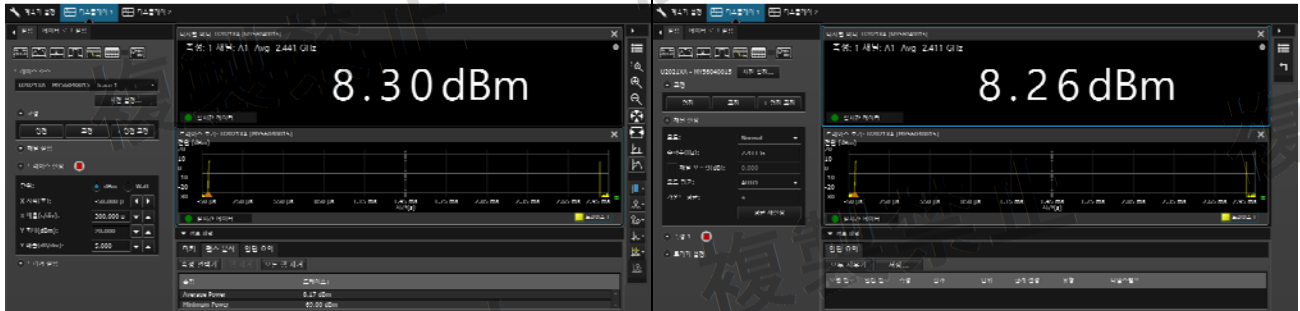
NOTE 1: Antenna power = Measured value (mW) / Spreading bandwidth (MHz) / Burst Ratio(ON Time/(ON Time + OFF Time))

NOTE 2: Tolerance (%) in normal mode = 100 × (Antenna power (mW/MHz) - Declared power (mW/MHz)) / Declared power (mW/MHz)

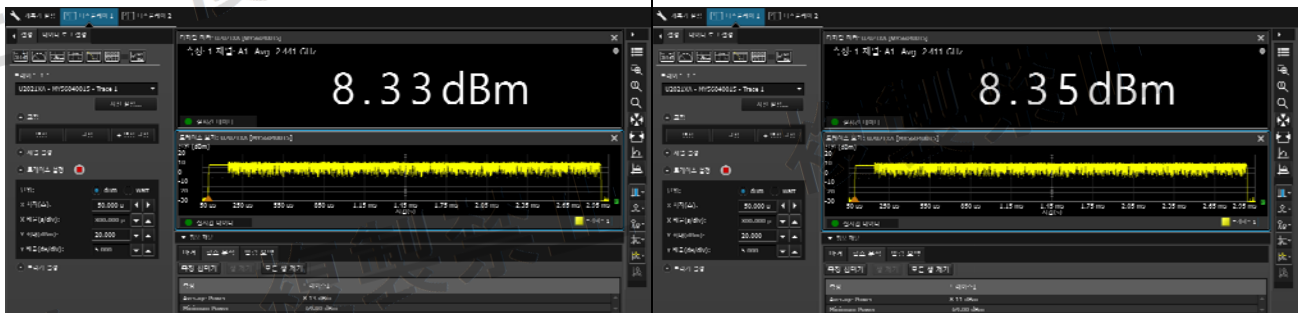
5.3.2 Test Plot (Normal Voltage)

Normal Hopping
Basic, GFSK modulation

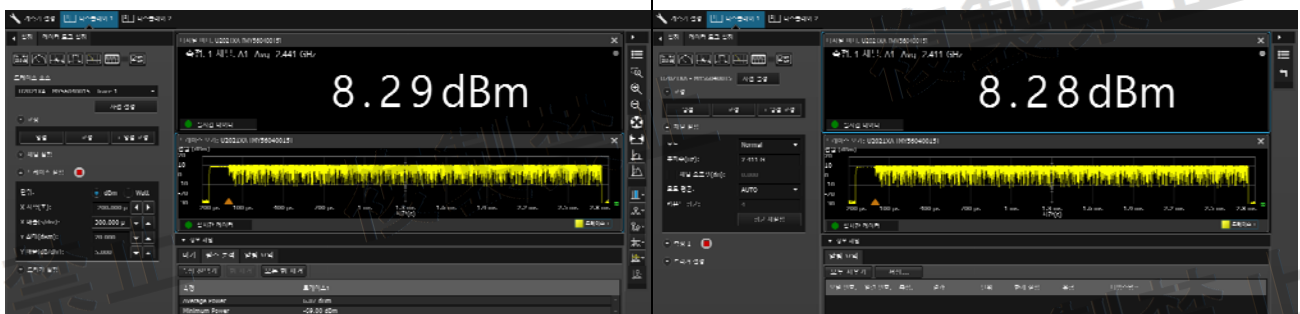
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



5.4. Dwell time & Burst Ratio

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5.4.1 Test Data

PASS

Test Conditions (Conducted)								
Temperature: (25 ± 3) °C			TEST RESULTS					
Rel. Humidity: (52 ± 3) % R.H.			Period (ms) (NOTE1)	Spreading bandwidth (MHz)	Symbol Rate (Mbps)	Hopping number (times)	Dwell Time(sec) (NOTE2)	Limit
Normal hopping	V _{MAX}	DC 4.20 V	3.75	71.43	1	79	0.2778	0.4 seconds or less
	V _{NOM}	DC 3.70 V	3.75	71.43	1	79	0.2778	
	V _{MIN}	DC 3.33 V	3.75	71.43	1	79	0.2778	
AFH	V _{MAX}	DC 4.20 V	3.77	17.98	1	20	0.2760	
	V _{NOM}	DC 3.70 V	3.76	18.07	1	20	0.2773	
	V _{MIN}	DC 3.33 V	3.76	18.01	1	20	0.2764	
EDR, π/4-DQPSK modulation								
Normal hopping	V _{MAX}	DC 4.20 V	3.76	71.43	1	79	0.2774	0.4 seconds or less
	V _{NOM}	DC 3.70 V	3.76	71.43	1	79	0.2774	
	V _{MIN}	DC 3.33 V	3.76	71.53	1	79	0.2778	
AFH	V _{MAX}	DC 4.20 V	3.76	18.16	1	20	0.2790	
	V _{NOM}	DC 3.70 V	3.76	18.19	1	20	0.2795	
	V _{MIN}	DC 3.33 V	3.76	18.19	1	20	0.2795	
EDR, 8DPSK modulation								
Normal hopping	V _{MAX}	DC 4.20 V	3.76	71.43	1	79	0.2774	0.4 seconds or less
	V _{NOM}	DC 3.70 V	3.76	71.53	1	79	0.2778	
	V _{MIN}	DC 3.33 V	3.76	71.53	1	79	0.2778	
AFH	V _{MAX}	DC 4.20 V	3.76	18.16	1	20	0.2800	
	V _{NOM}	DC 3.70 V	3.76	18.19	1	20	0.2805	
	V _{MIN}	DC 3.33 V	3.76	18.22	1	20	0.2809	
Measurement uncertainty: ± 1.4 dB								

NOTE 1: Period (ms) = ON Time (ms) + OFF Time (ms)

NOTE 2: Result Dwell Time= { 0.4*(Spreading bandwidth / Symbol Rate) / (Period * Hopping number)} * ON Time

5.4.2 Test Data

PASS

Test Conditions (Conducted)			TEST RESULTS		
Temperature:	(25 ± 3) °C				
Rel. Humidity:	(52 ± 3) % R.H.		ON Time (ms)	OFF time (ms)	Burst Ratio
Basic, GFSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	2.88	0.87	0.7680000
	V _{NOM}	DC 3.70 V	2.88	0.87	0.7680000
	V _{MIN}	DC 3.33 V	2.88	0.87	0.7680000
AFH	V _{MAX}	DC 4.20 V	2.89	0.88	0.7675963
	V _{NOM}	DC 3.70 V	2.89	0.88	0.7672872
	V _{MIN}	DC 3.33 V	2.89	0.88	0.7672872
EDR, π/4-DQPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	2.88	0.88	0.7669774
	V _{NOM}	DC 3.70 V	2.88	0.88	0.7669774
	V _{MIN}	DC 3.33 V	2.88	0.88	0.7669774
AFH	V _{MAX}	DC 4.20 V	2.89	0.87	0.7683089
	V _{NOM}	DC 3.70 V	2.89	0.87	0.7683089
	V _{MIN}	DC 3.33 V	2.89	0.87	0.7683089
EDR, 8DPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	2.88	0.88	0.7670394
	V _{NOM}	DC 3.70 V	2.88	0.88	0.7670394
	V _{MIN}	DC 3.33 V	2.88	0.88	0.7670394
AFH	V _{MAX}	DC 4.20 V	2.90	0.86	0.7709720
	V _{NOM}	DC 3.70 V	2.90	0.86	0.7709720
	V _{MIN}	DC 3.33 V	2.90	0.86	0.7709720
Measurement uncertainty: ± 1.4 dB					

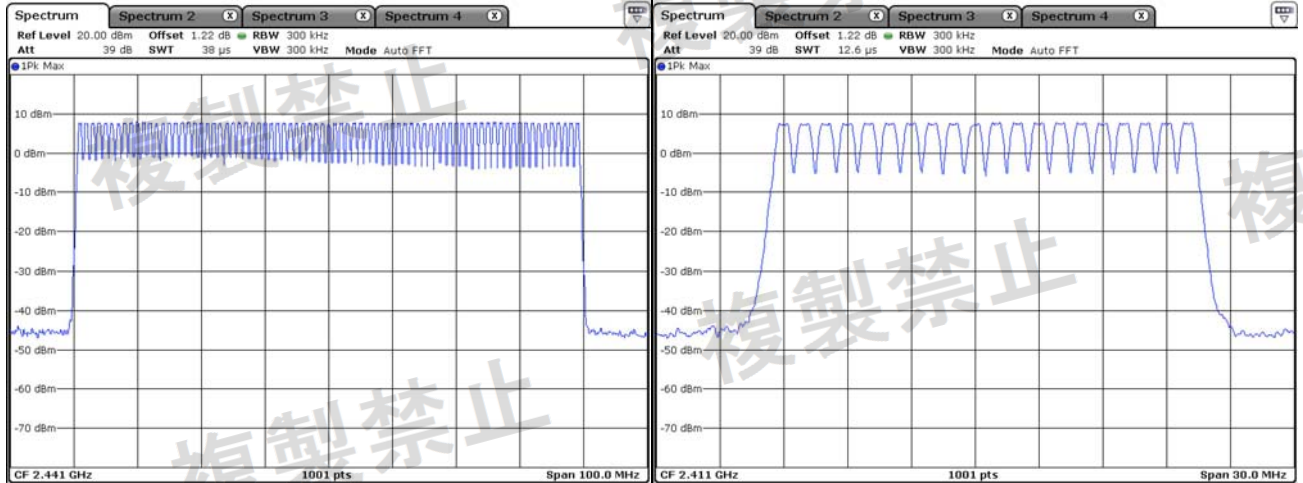
5.4.3 Test Plot (Normal Voltage)

Basic, GFSK modulation

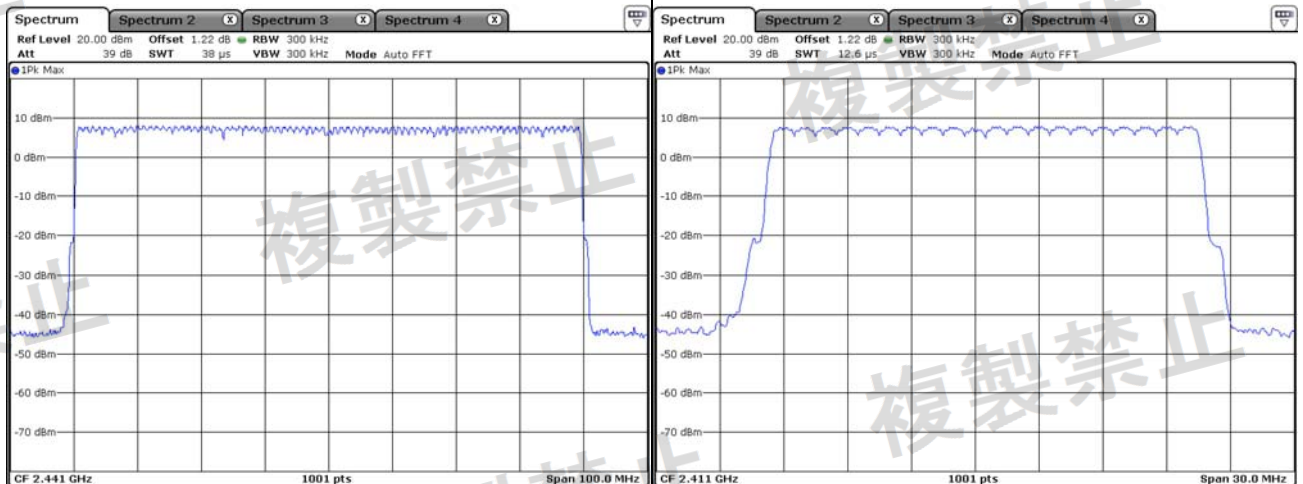
Normal Hopping

Hopping number

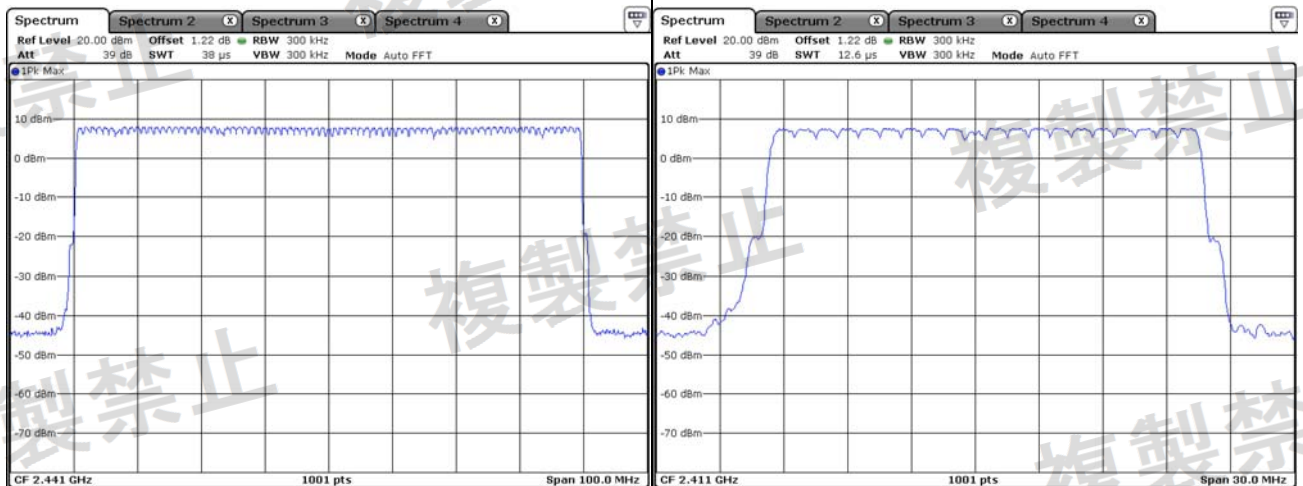
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK

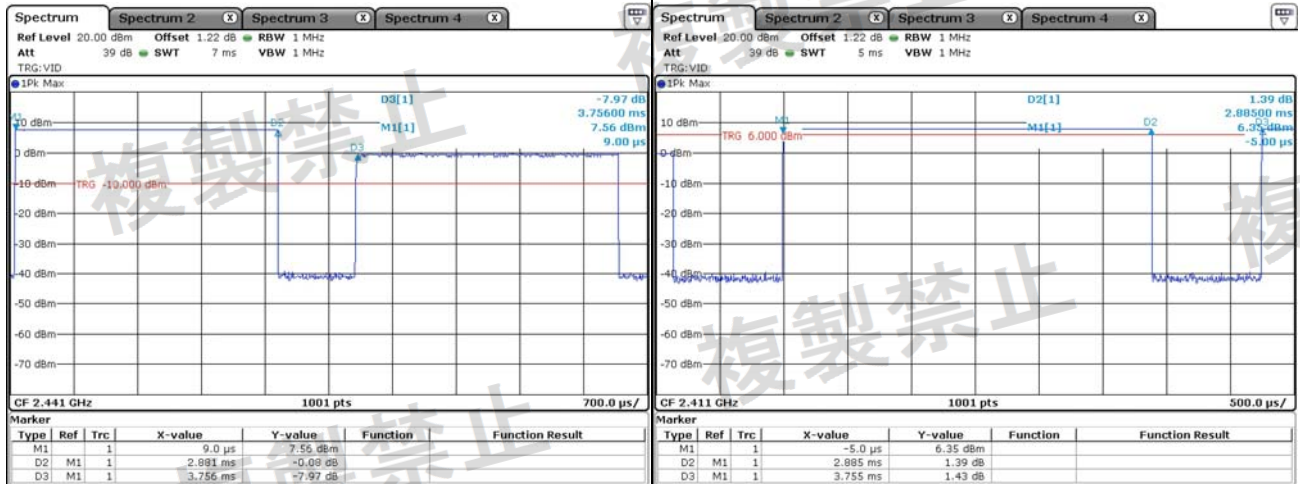


Basic, GFSK modulation

Normal Hopping

ON/OFF TIME

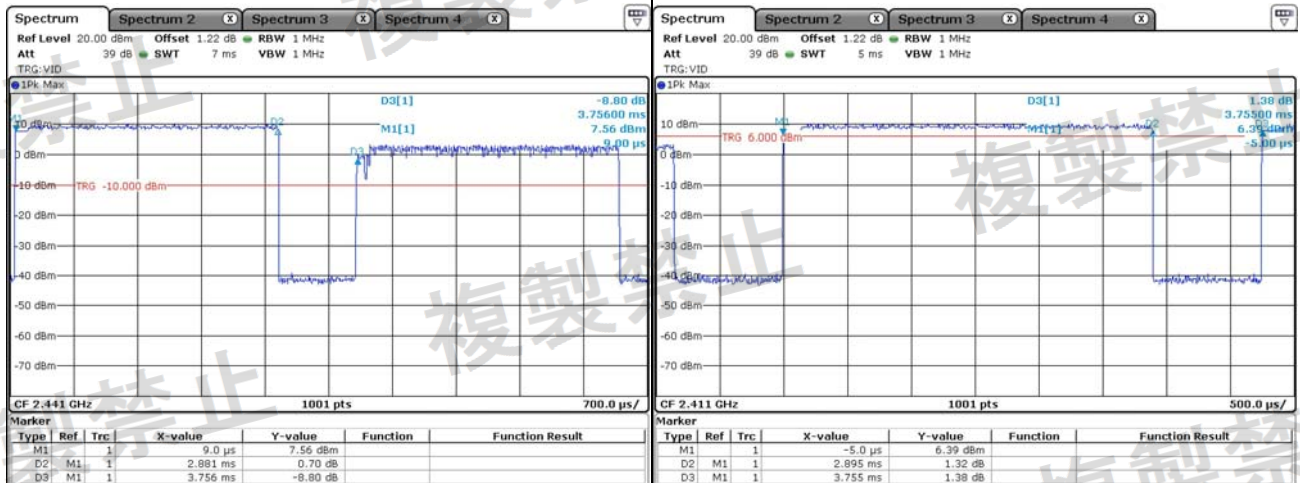
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



5.5. Transmitter spurious emissions

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.5.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Basic, GFSK modulation		(MHz)	(dBm/MHz)	
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2376.40	-51.99	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2381.10	-50.07	
	V _{MIN} DC 3.33 V	2381.10	-51.29	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-31.14	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-31.20	
	V _{MIN} DC 3.33 V	2399.99	-30.87	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2484.05	-46.49	
	V _{NOM} DC 3.70 V	2484.91	-46.82	
	V _{MIN} DC 3.33 V	2483.51	-45.32	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7308.50	-44.29	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7248.50	-44.30	
	V _{MIN} DC 3.33 V	7268.50	-44.30	
Basic, GFSK modulation [AFH]				
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2383.50	-49.64	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2385.80	-49.29	
	V _{MIN} DC 3.33 V	2383.50	-50.23	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-30.68	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-30.41	
	V _{MIN} DC 3.33 V	2399.99	-30.69	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2483.51	-55.82	
	V _{NOM} DC 3.70 V	2488.61	-54.31	
	V _{MIN} DC 3.33 V	2490.36	-55.44	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7208.50	-44.06	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7208.50	-43.95	
	V _{MIN} DC 3.33 V	7258.50	-43.77	

EDR, $\pi/4$ -DQPSK modulation

30 MHz ~ 2387 MHz	V_{MAX}	DC 4.20 V	2369.30	-53.62	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	2376.40	-50.94	
	V_{MIN}	DC 3.33 V	2385.80	-51.23	
2387 MHz ~ 2400 MHz	V_{MAX}	DC 4.20 V	2399.99	-18.98	25 μ W/MHz($\approx$ -16dBm) or less
	V_{NOM}	DC 3.70 V	2399.99	-18.93	
	V_{MIN}	DC 3.33 V	2399.99	-18.85	
2483.5 ~ 2496.5 MHz	V_{MAX}	DC 4.20 V	2483.51	-39.86	
	V_{NOM}	DC 3.70 V	2483.53	-44.91	
	V_{MIN}	DC 3.33 V	2483.51	-42.53	
2496.5 ~ 12500 MHz	V_{MAX}	DC 4.20 V	7208.50	-42.90	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	7208.50	-42.90	
	V_{MIN}	DC 3.33 V	7288.50	-43.21	

EDR, $\pi/4$ -DQPSK modulation [AFH]

30 MHz ~ 2387 MHz	V_{MAX}	DC 4.20 V	2378.80	-50.87	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	2376.40	-51.49	
	V_{MIN}	DC 3.33 V	2371.70	-51.37	
2387 MHz ~ 2400 MHz	V_{MAX}	DC 4.20 V	2399.99	-17.59	25 μ W/MHz($\approx$ -16dBm) or less
	V_{NOM}	DC 3.70 V	2399.99	-17.64	
	V_{MIN}	DC 3.33 V	2399.99	-17.59	
2483.5 ~ 2496.5 MHz	V_{MAX}	DC 4.20 V	2484.52	-54.91	
	V_{NOM}	DC 3.70 V	2483.62	-53.92	
	V_{MIN}	DC 3.33 V	2488.38	-54.78	
2496.5 ~ 12500 MHz	V_{MAX}	DC 4.20 V	7218.50	-43.18	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	7208.50	-43.15	
	V_{MIN}	DC 3.33 V	7228.50	-43.01	

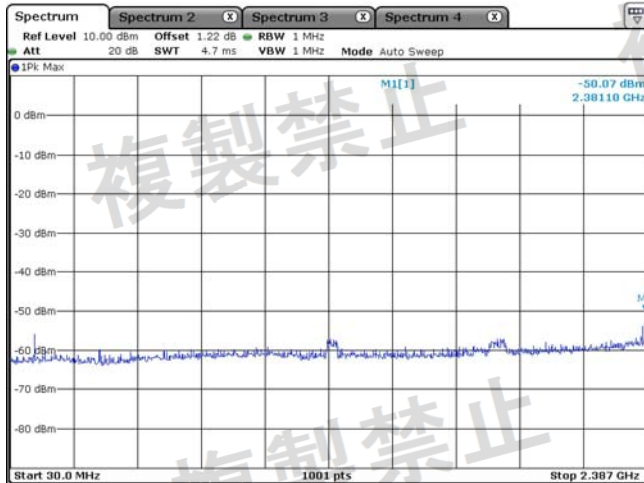
EDR, 8DPSK modulation

30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	2381.10	-50.44	2.5μW/MHz(≡ -26dBm) or less
	V _{NOM}	DC 3.70 V	2376.40	-51.56	
	V _{MIN}	DC 3.33 V	2367.00	-53.37	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2399.99	-17.97	25 μW/MHz(≡ -16dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-17.31	
	V _{MIN}	DC 3.33 V	2399.99	-18.02	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2483.51	-40.06	
	V _{NOM}	DC 3.70 V	2483.51	-40.48	
	V _{MIN}	DC 3.33 V	2484.69	-39.09	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7268.50	-42.98	2.5μW/MHz(≡ -26dBm) or less
	V _{NOM}	DC 3.70 V	7278.50	-42.58	
	V _{MIN}	DC 3.33 V	7268.50	-43.08	
EDR, 8DPSK modulation [AFH]					
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	2385.80	-50.08	2.5μW/MHz(≡ -26dBm) or less
	V _{NOM}	DC 3.70 V	2385.80	-50.11	
	V _{MIN}	DC 3.33 V	2385.80	-49.17	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2399.99	-17.66	25 μW/MHz(≡ -16dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-17.01	
	V _{MIN}	DC 3.33 V	2399.99	-17.15	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2483.66	-53.68	
	V _{NOM}	DC 3.70 V	2484.08	-54.57	
	V _{MIN}	DC 3.33 V	2484.07	-54.84	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7258.50	-42.93	2.5μW/MHz(≡ -26dBm) or less
	V _{NOM}	DC 3.70 V	7258.50	-42.90	
	V _{MIN}	DC 3.33 V	7248.50	-42.74	
Measurement uncertainty: ± 3.0					

5.5.2 Test Plot (Normal Voltage)

Transmitter spurious emissions - (Basic, GFSK modulation)

30 ~ 2387 MHz



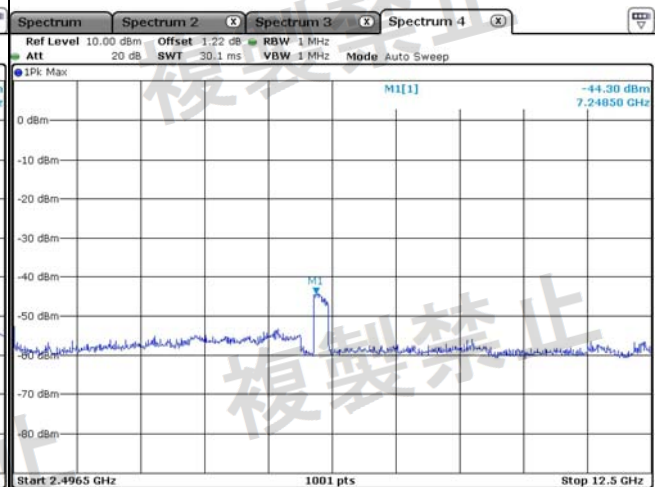
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

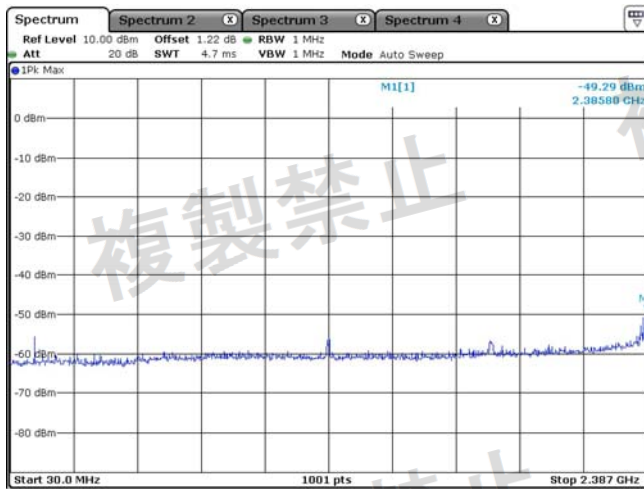


2496.5 ~ 12500 MHz

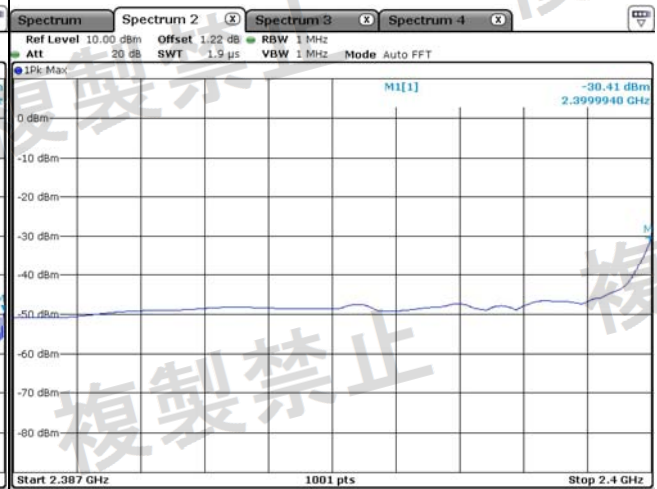


Transmitter spurious emissions - (Basic, GFSK modulation[AFH])

30 ~ 2387 MHz



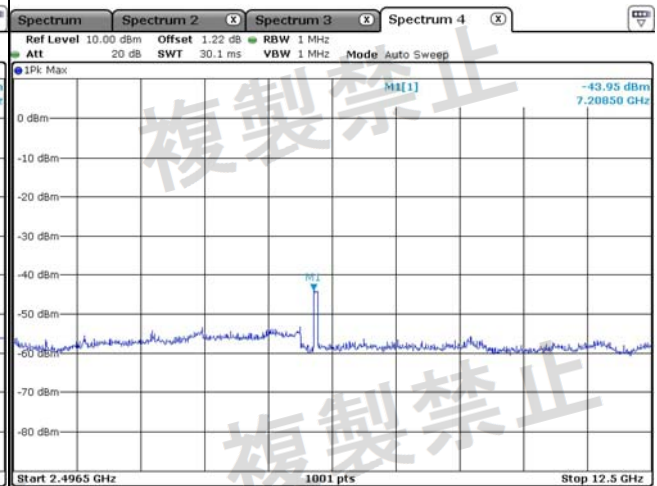
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

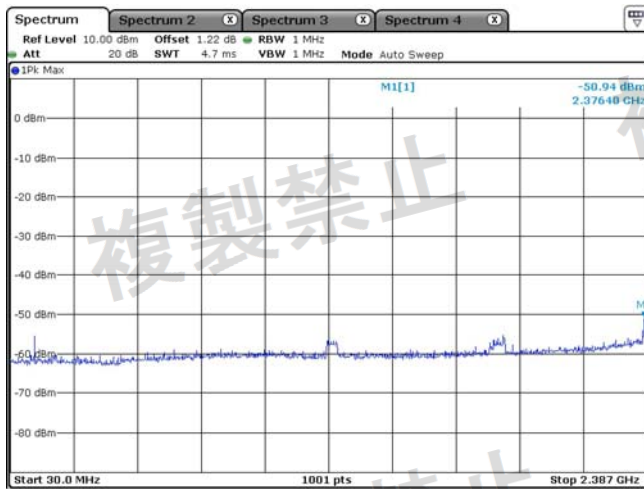


2496.5 ~ 12500 MHz

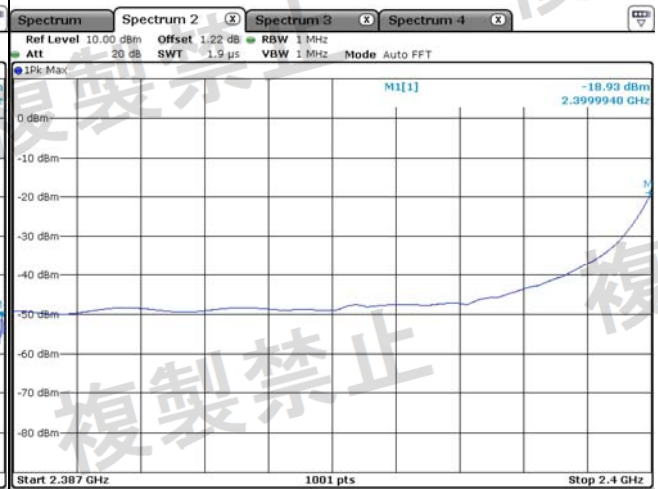


Transmitter spurious emissions - (EDR, $\pi/4$ -DQPSK modulation)

30 ~ 2387 MHz



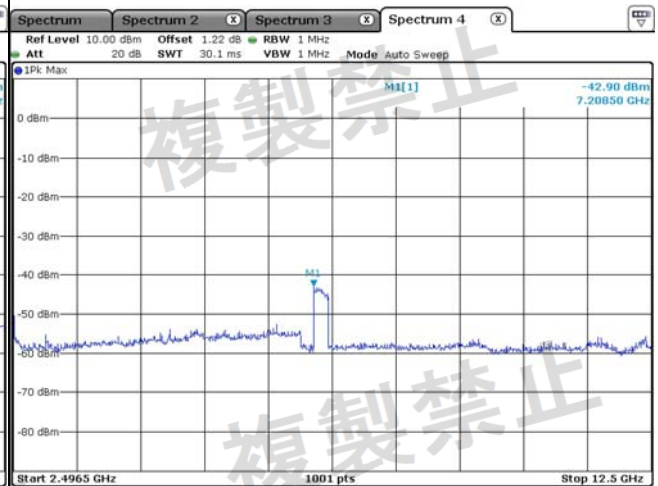
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

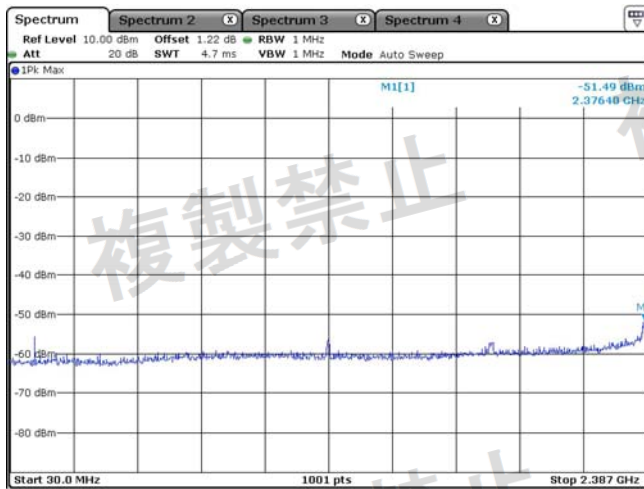


2496.5 ~ 12500 MHz

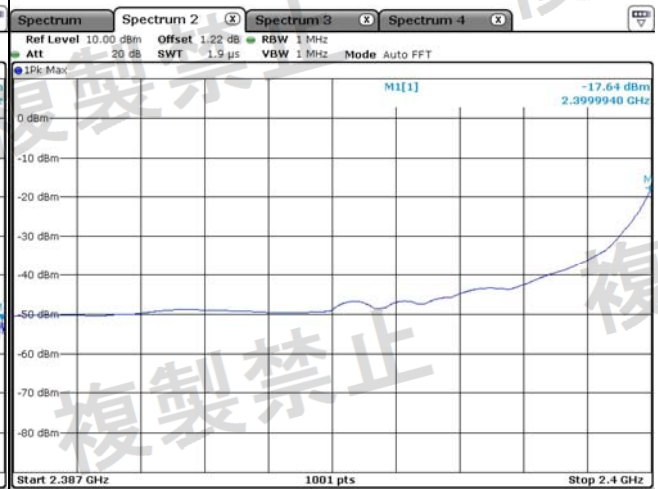


Transmitter spurious emissions - (EDR, $\pi/4$ -DQPSK modulation [AFH])

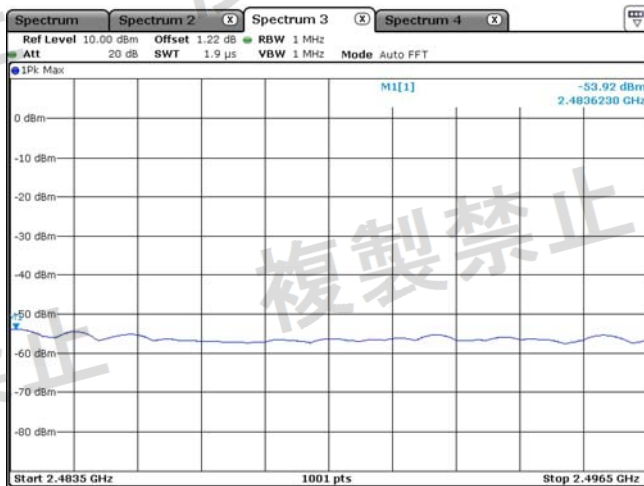
30 ~ 2387 MHz



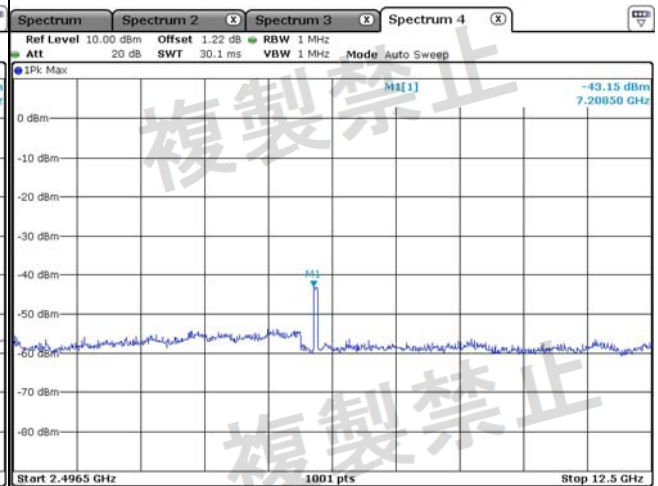
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

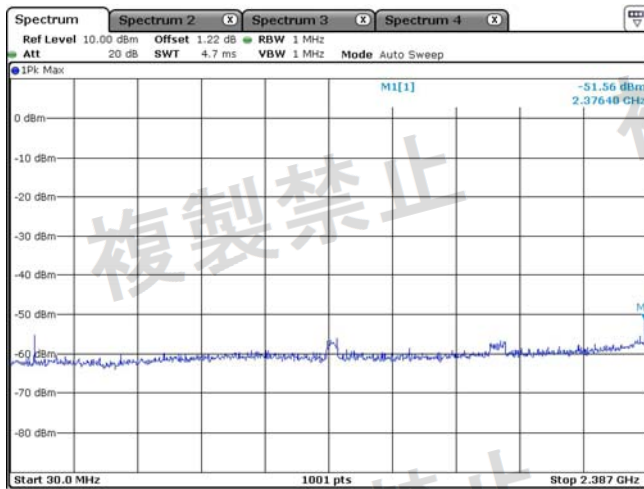


2496.5 ~ 12500 MHz

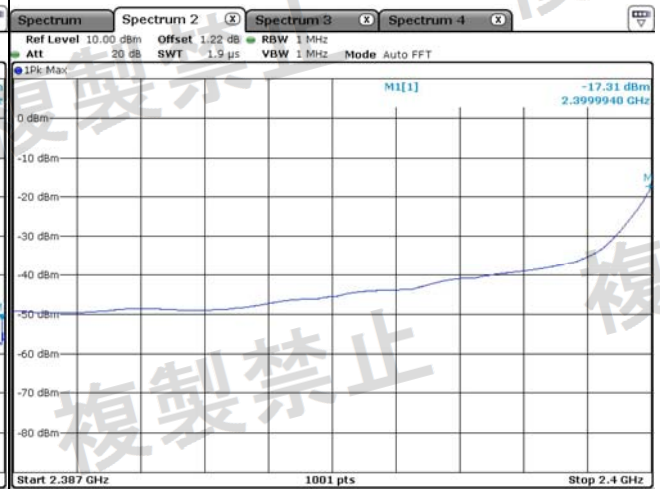


Transmitter spurious emissions - (EDR, 8DPSK modulation)

30 ~ 2387 MHz



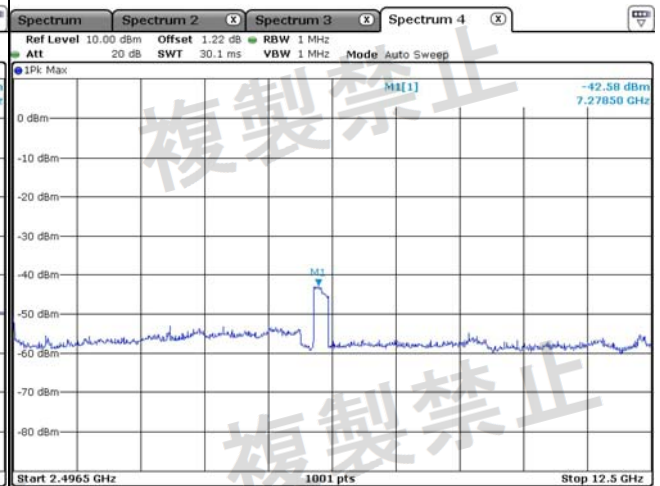
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

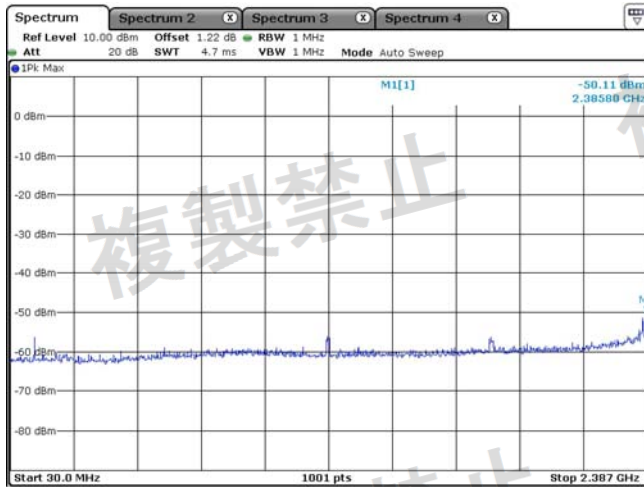


2496.5 ~ 12500 MHz



Transmitter spurious emissions - (EDR, 8DPSK modulation [AFH])

30 ~ 2387 MHz



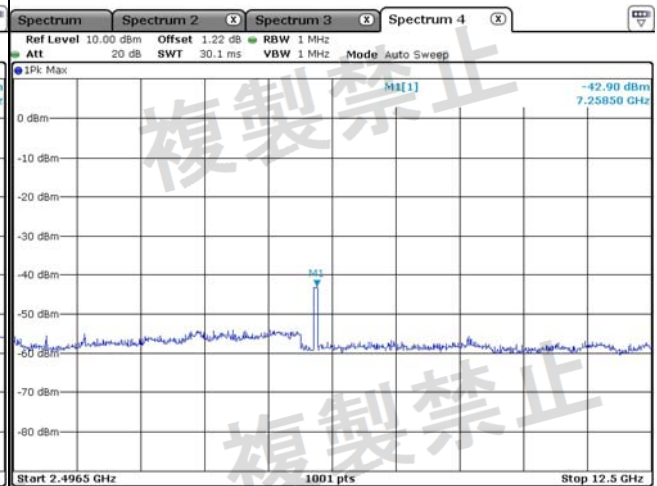
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



5.6. Receiver spurious emissions(Left Earphone)

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.6.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Basic, GFSK modulation		(MHz)	(dBm/MHz)	
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	65.37	-69.62	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	62.46	-69.92	
	V _{MIN} DC 3.33 V	65.37	-70.43	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6957.00	-64.25	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6796.00	-63.88	
	V _{MIN} DC 3.33 V	6991.00	-63.22	
Basic, GFSK modulation [AFH]				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	69.25	-70.01	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	68.28	-69.73	
	V _{MIN} DC 3.33 V	68.28	-70.32	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6945.00	-64.15	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6934.00	-63.68	
	V _{MIN} DC 3.33 V	6991.00	-64.02	
EDR, π/4-DQPSK modulation				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	68.28	-70.72	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	68.28	-69.15	
	V _{MIN} DC 3.33 V	68.28	-70.31	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6348.00	-64.05	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	7003.00	-63.23	
	V _{MIN} DC 3.33 V	6865.00	-63.75	
EDR, π/4-DQPSK modulation [AFH]				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	63.43	-74.31	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	64.40	-72.32	
	V _{MIN} DC 3.33 V	63.43	-72.65	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6555.00	-64.09	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6520.00	-64.37	
	V _{MIN} DC 3.33 V	6876.00	-64.55	

EDR, 8DPSK modulation

30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	65.37	-68.16	4nW(≡ -53.98dBm) or less
	V _{NOM}	DC 3.70 V	62.46	-68.27	
	V _{MIN}	DC 3.33 V	64.40	-65.87	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6750.00	-64.34	20nW(≡ -46.99dBm) or less
	V _{NOM}	DC 3.70 V	6980.00	-64.57	
	V _{MIN}	DC 3.33 V	6807.00	-64.29	

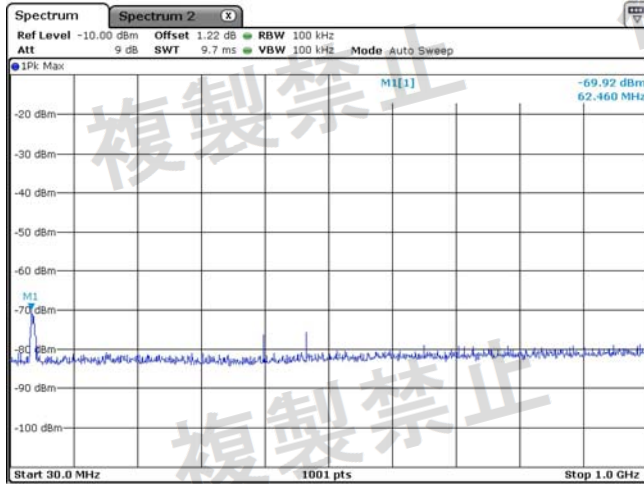
EDR, 8DPSK modulation [AFH]

30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	62.46	-75.23	4nW(≡ -53.98dBm) or less
	V _{NOM}	DC 3.70 V	64.40	-73.95	
	V _{MIN}	DC 3.33 V	64.40	-74.40	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6853.00	-64.17	20nW(≡ -46.99dBm) or less
	V _{NOM}	DC 3.70 V	6980.00	-64.02	
	V _{MIN}	DC 3.33 V	6773.00	-64.05	

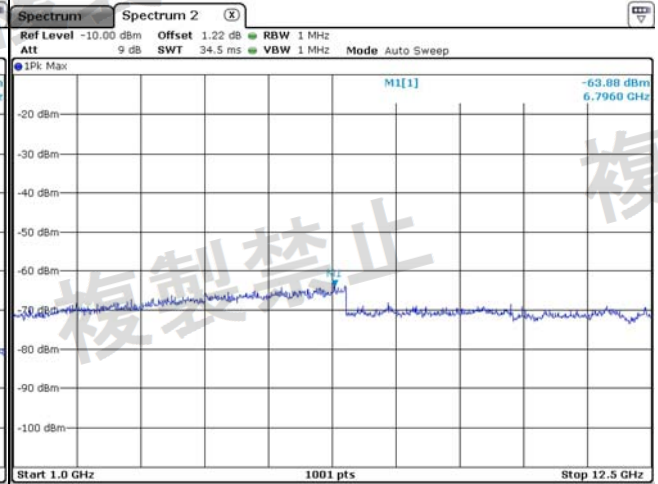
5.6.2 Test Plot (Normal Voltage)

Receiver spurious emissions - Basic, GFSK modulation

30 ~ 1000 MHz

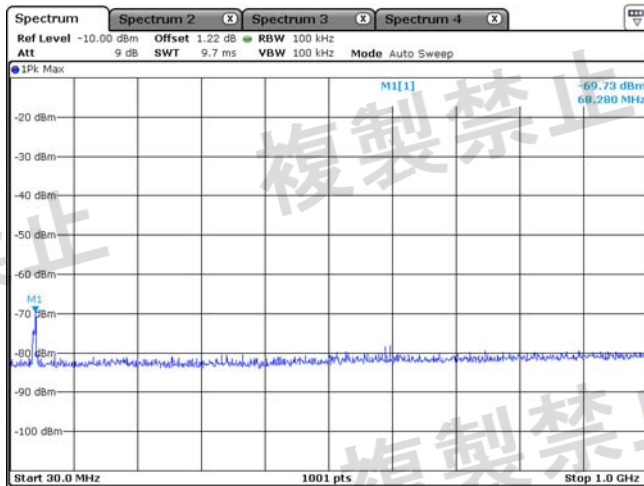


1000 ~ 12500 MHz



Basic, GFSK modulation [AFH]

30 ~ 1000 MHz

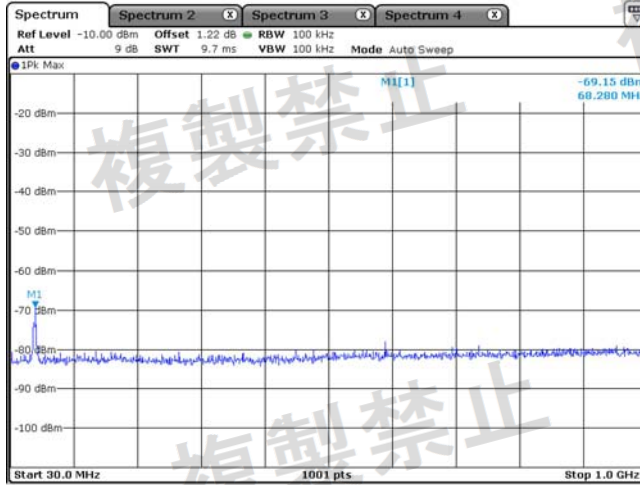


1000 ~ 12500 MHz



Receiver spurious emissions -
EDR, $\pi/4$ -DQPSK modulation

30 ~ 1000 MHz

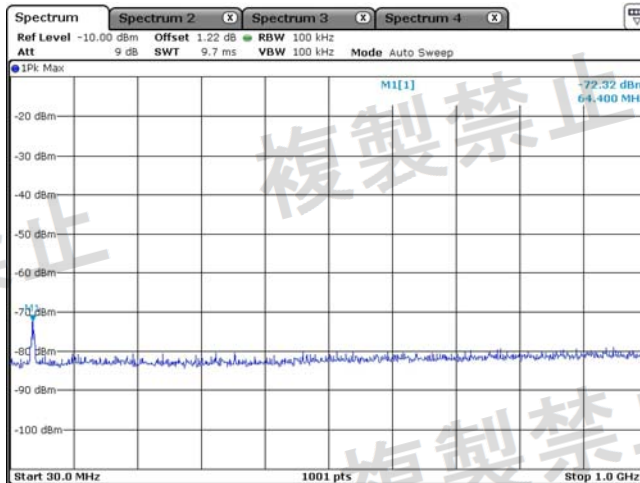


1000 ~ 12500 MHz

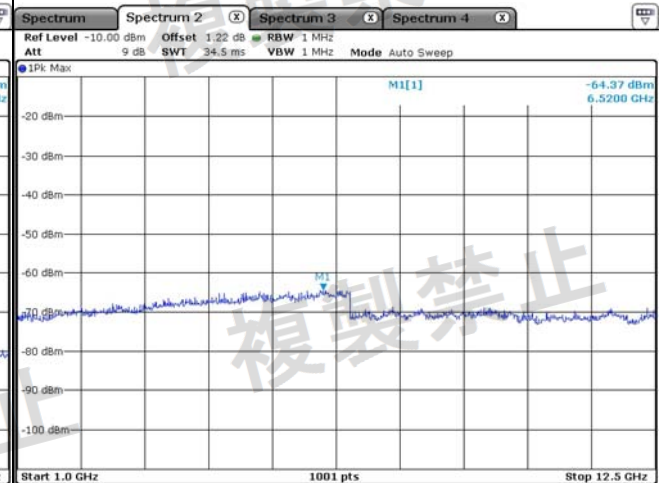


EDR, $\pi/4$ -DQPSK modulation [AFH]

30 ~ 1000 MHz

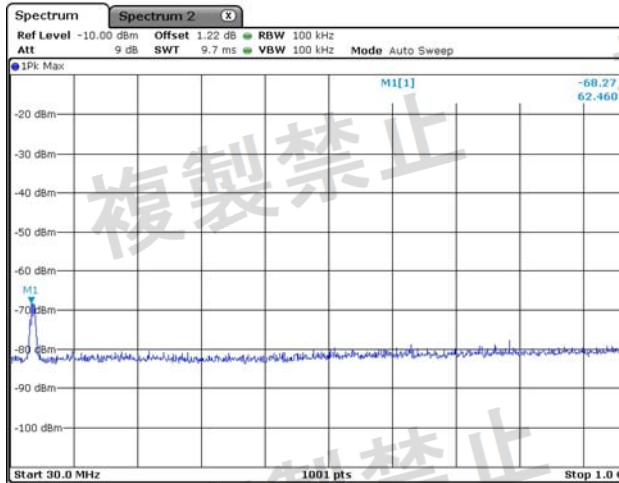


1000 ~ 12500 MHz

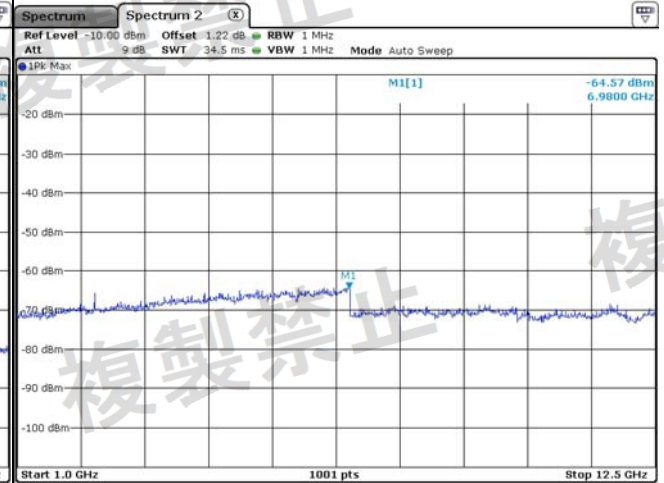


**Receiver spurious emissions -
EDR, 8DPSK modulation**

30 ~ 1000 MHz

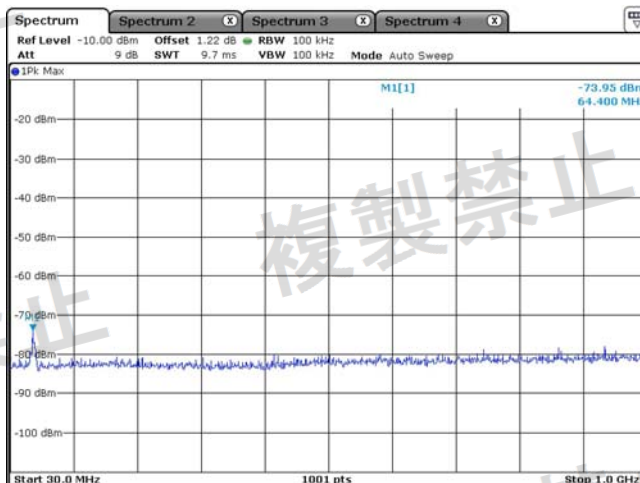


1000 ~ 12500 MHz

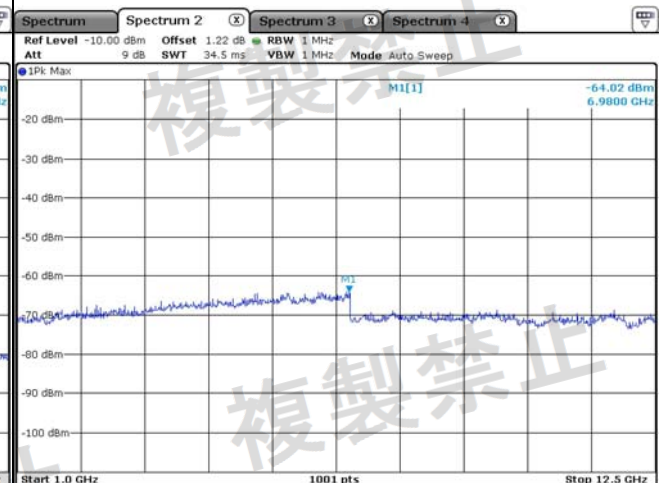


EDR, 8DPSK modulation [AFH]

30 ~ 1000 MHz



1000 ~ 12500 MHz



5.7. Anti-Interference

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

5.7.1 Test Data

PASS

Test Conditions (Conducted)	
Temperature: (25 ± 3) °C	TEST RESULTS
Rel. Humidity: (52 ± 3) % R.H.	PASS

6 Measurement results (BDR/EDR) (Right Earphone)

6.1. Frequency tolerance

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

6.1.1 Test Data

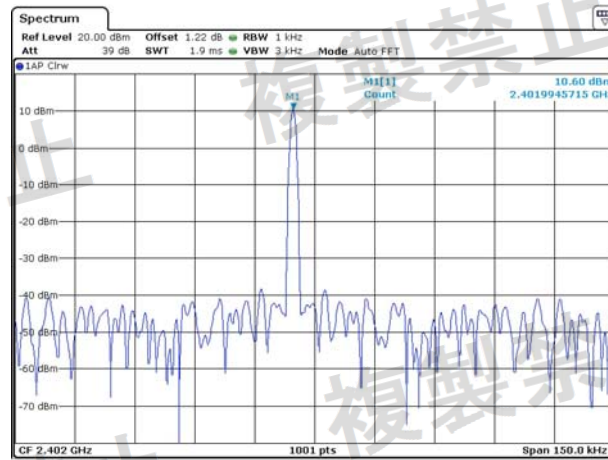
PASS

Test Conditions (Conducted)			TEST RESULTS		
Temperature:		(25 ± 3) °C			
Rel. Humidity:		(52 ± 3) % R.H.			
Basic			Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low	V _{MAX}	DC 4.20 V			
Frequency: 2402 MHz	V _{NOM}	DC 3.70 V	2.4019946031	-2.25	± 50
	V _{MIN}	DC 3.33 V	2.4019945715	-2.26	
	V _{MIN}	DC 3.33 V	2.4019945549	-2.27	
Middle Frequency: 2441 MHz	V _{MAX}	DC 4.20 V	2.4409944731	-2.26	
	V _{NOM}	DC 3.70 V	2.4409944689	-2.27	
	V _{MIN}	DC 3.33 V	2.4409944659	-2.27	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	2.4799944171	-2.25	
	V _{NOM}	DC 3.70 V	2.4799944218	-2.25	
	V _{MIN}	DC 3.33 V	2.4799944382	-2.24	
EDR					
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	2.4019755530	-10.18	± 50
	V _{NOM}	DC 3.70 V	2.4019755030	-10.20	
	V _{MIN}	DC 3.33 V	2.4019754580	-10.22	
Middle Frequency: 2441 MHz	V _{MAX}	DC 4.20 V	2.4409748647	-10.30	
	V _{NOM}	DC 3.70 V	2.4409748590	-10.30	
	V _{MIN}	DC 3.33 V	2.4409748465	-10.30	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	2.4799744468	-10.30	
	V _{NOM}	DC 3.70 V	2.4799744487	-10.30	
	V _{MIN}	DC 3.33 V	2.4799744512	-10.30	
Measurement uncertainty: ± 2 × 10 ⁻⁷					

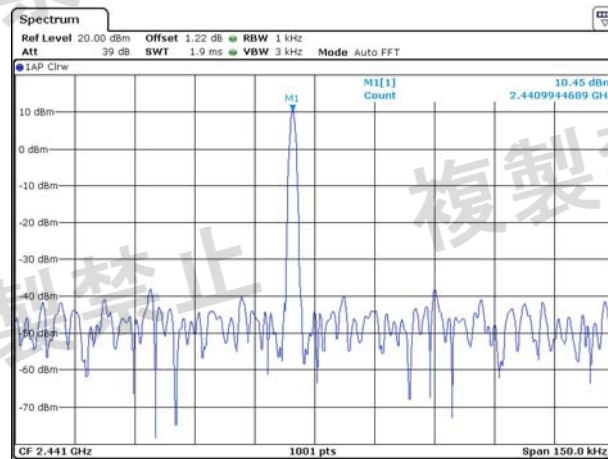
6.1.2 Test Plot (Normal Voltage)

Basic

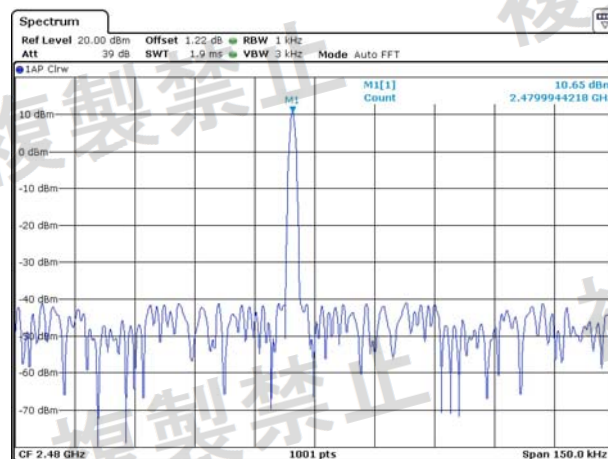
Low Channel
(2402 MHz)



Middle Channel
(2441 MHz)

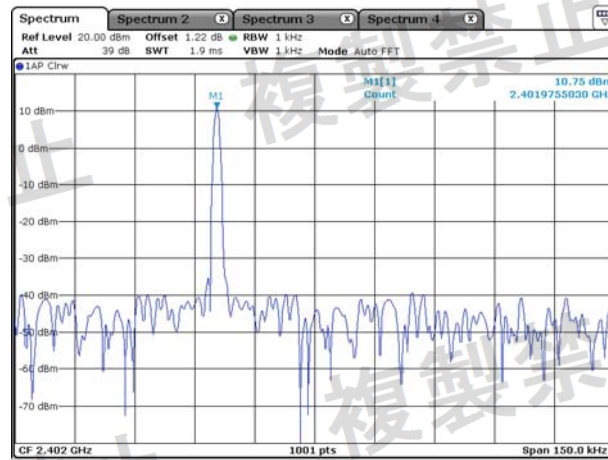


High Channel
(2480 MHz)



EDR

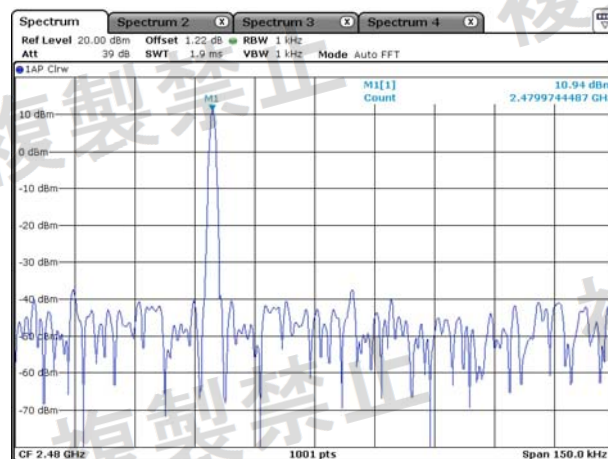
Low Channel
(2402 MHz)



Middle Channel
(2441 MHz)



High Channel
(2480 MHz)



6.2. Occupied bandwidth (99%) and Spreading bandwidth (90%)

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

6.2.1 Test Data

PASS

Test Conditions (Conducted)					
Temperature: (25 ± 3) °C			TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.			Occupied bandwidth (MHz)	Spreading bandwidth (MHz)	Limit
Basic, GFSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	78.22	71.33	83.5MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.12	71.33	
	V _{MIN}	DC 3.33 V	78.12	71.33	
AFH	V _{MAX}	DC 4.20 V	19.54	18.04	
	V _{NOM}	DC 3.70 V	19.54	17.98	
	V _{MIN}	DC 3.33 V	19.54	18.01	
EDR, π/4-DQPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	78.42	71.43	83.5MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.32	71.43	
	V _{MIN}	DC 3.33 V	78.32	71.43	
AFH	V _{MAX}	DC 4.20 V	19.96	18.13	
	V _{NOM}	DC 3.70 V	19.96	18.19	
	V _{MIN}	DC 3.33 V	19.96	18.19	
EDR, 8DPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	78.32	71.43	83.5MHz or below / 500 kHz or more
	V _{NOM}	DC 3.70 V	78.32	71.43	
	V _{MIN}	DC 3.33 V	78.32	71.33	
AFH	V _{MAX}	DC 4.20 V	19.96	18.19	
	V _{NOM}	DC 3.70 V	19.93	18.22	
	V _{MIN}	DC 3.33 V	19.93	18.19	
Measurement uncertainty: ± 3 × 10 ⁻⁴					

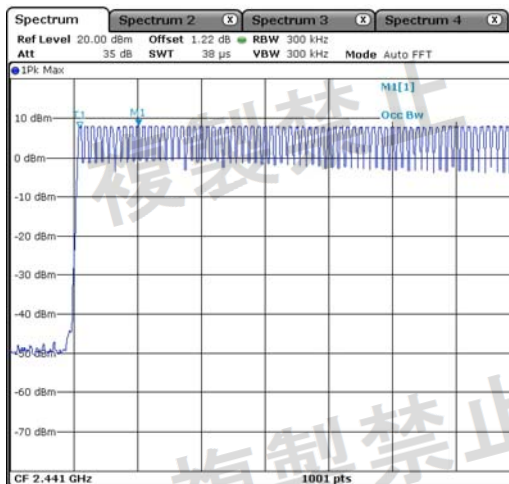
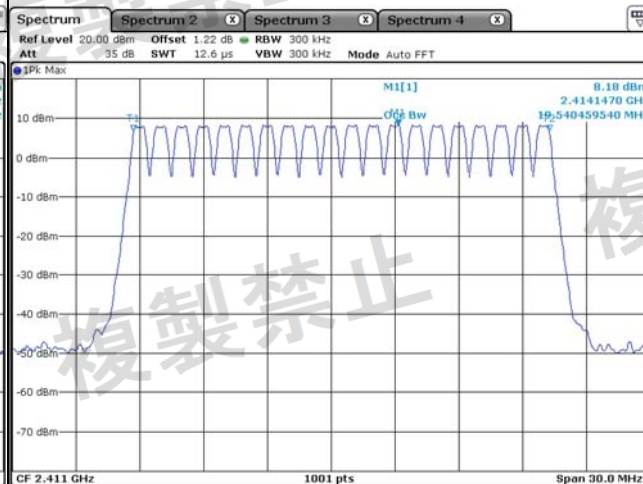
6.2.2 Test Plot (Normal Voltage)

Occupied bandwidth (99%)

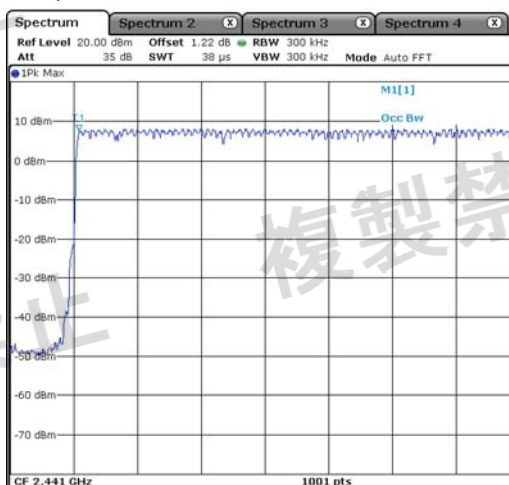
Normal Hopping,

Basic, GFSK modulation

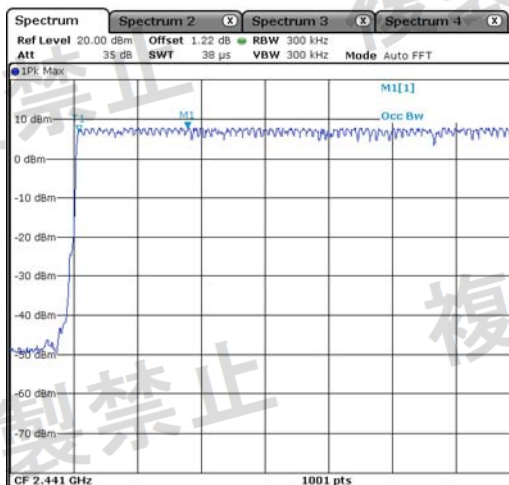
AFH



EDR, $\pi/4$ -DQPSK modulation



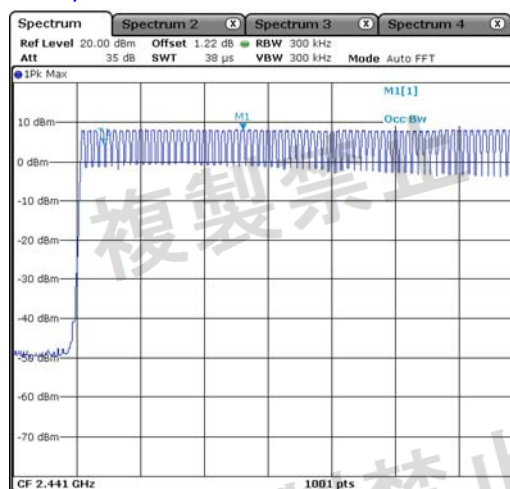
EDR, 8DPSK modulation



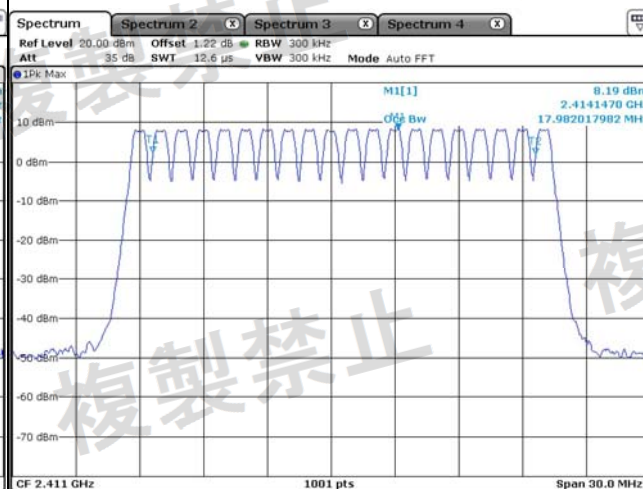
Spreading bandwidth (90 %)

Normal Hopping

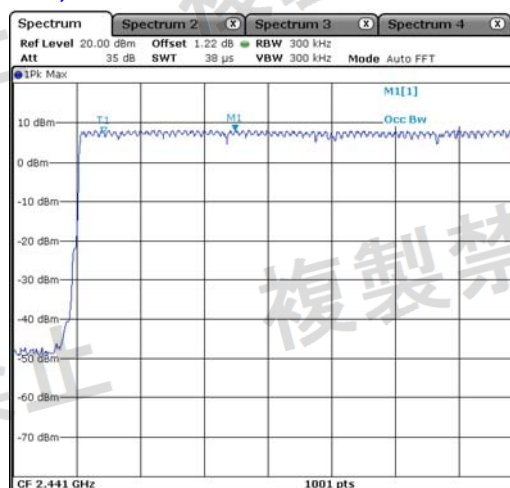
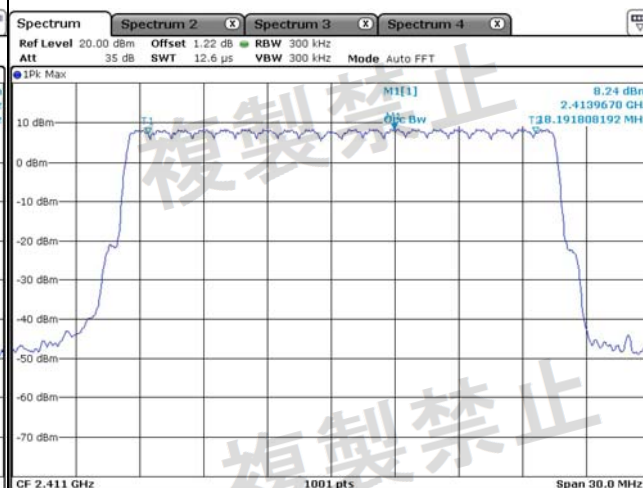
Basic, GFSK modulation



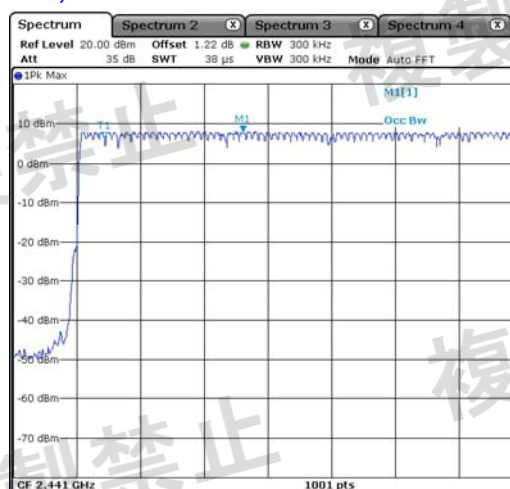
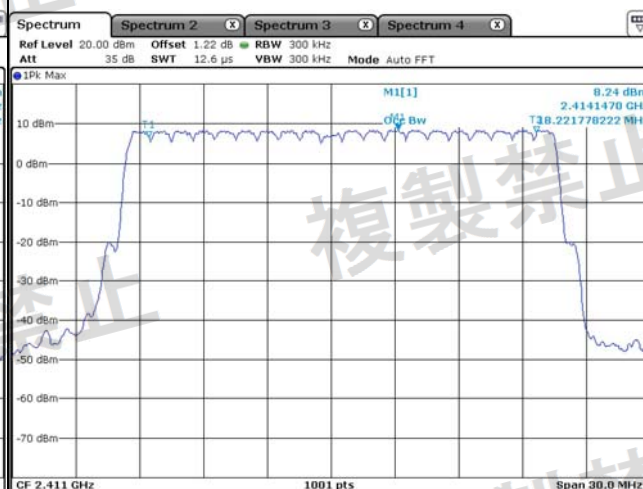
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



6.3. Antenna power

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6.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):			F1D,G1D: 0.00012(Normal)-0.00048(AFH) W/MHz			
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (52 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW/MHz) (NOTE1)	Tolerance (%) (NOTE2)	Limit
Basic, GFSK modulation						
Normal hopping	V _{MAX}	DC 4.20 V	8.33	0.12439	3.65	(Antenna Power) 3 mW/MHz or less/
	V _{NOM}	DC 3.70 V	8.30	0.12353	2.94	
	V _{MIN}	DC 3.33 V	8.32	0.12410	3.42	
AFH	V _{MAX}	DC 4.20 V	8.31	0.48826	1.72	(tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.31	0.48989	2.06	
	V _{MIN}	DC 3.33 V	8.28	0.48570	1.19	
EDR, π/4-DQPSK modulation						
Normal hopping	V _{MAX}	DC 4.20 V	8.35	0.12478	3.99	(Antenna Power) 3 mW/MHz or less
	V _{NOM}	DC 3.70 V	8.34	0.12450	3.75	
	V _{MIN}	DC 3.33 V	8.36	0.12507	4.23	
AFH	V _{MAX}	DC 4.20 V	8.37	0.49279	2.66	(tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.40	0.49457	3.04	
	V _{MIN}	DC 3.33 V	8.31	0.48443	0.92	
EDR, 8DPSK modulation						
Normal hopping	V _{MAX}	DC 4.20 V	8.32	0.12393	3.27	(Antenna Power) 3 mW/MHz or less
	V _{NOM}	DC 3.70 V	8.27	0.12251	2.09	
	V _{MIN}	DC 3.33 V	8.29	0.12325	2.70	
AFH	V _{MAX}	DC 4.20 V	8.30	0.48312	0.65	(tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.29	0.48121	0.25	
	V _{MIN}	DC 3.33 V	8.32	0.48535	1.11	
Measurement uncertainty: ± 1.4 dB						

** Measured value (dBm) is the average output power of the transmitter; the power meter reading and corrected for the cable loss. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the peak power meter.

NOTE 1: Antenna power = Measured value (mW) / Spreading bandwidth (MHz) / Burst Ratio(ON Time/(ON Time + OFF Time))

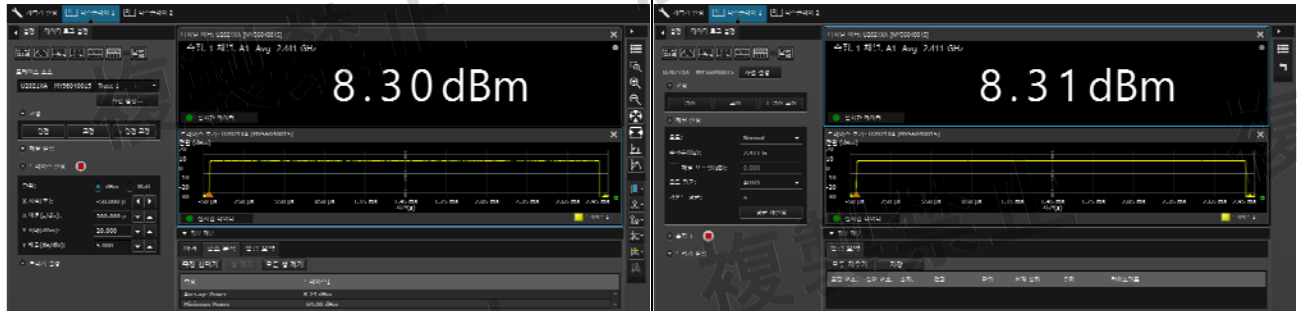
NOTE 2: Tolerance (%) in normal mode = 100 × (Antenna power (mW/MHz) - Declared power (mW/MHz)) / Declared power (mW/MHz)

6.3.2 Test Plot (Normal Voltage)

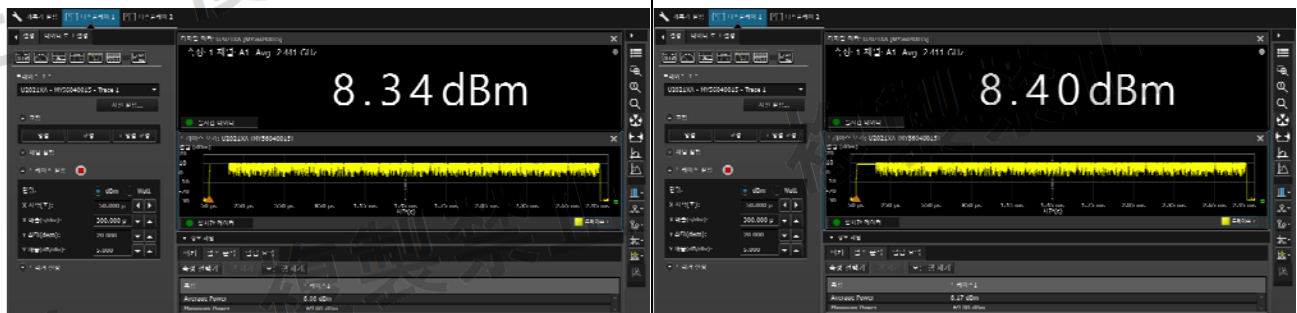
6.3.2 Test Plot (Normal Voltage)

Normal Hopping
Basic, GFSK modulation

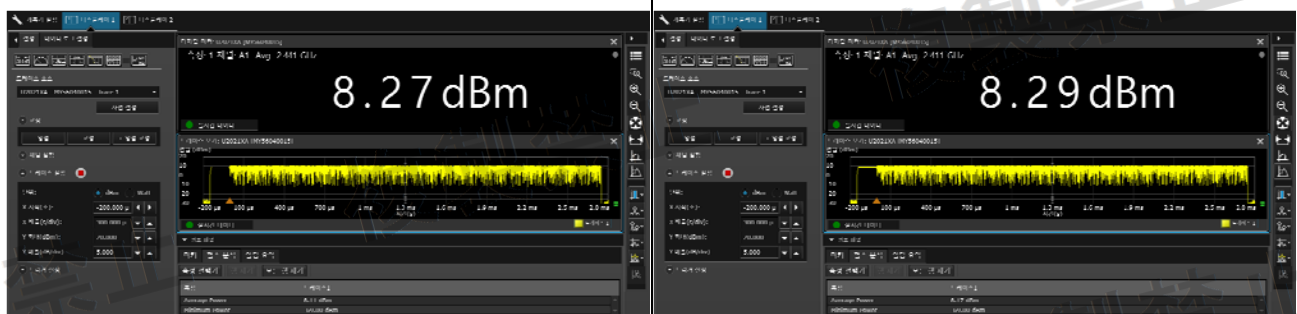
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



6.4. Dwell time & Burst Ratio

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6.4.1 Test Data

PASS

Test Conditions (Conducted)								
Temperature: (25 ± 3) °C			TEST RESULTS					
Rel. Humidity: (52 ± 3) % R.H.			Period (ms) (NOTE1)	Spreading bandwidth (MHz)	Symbol Rate (Mbps)	Hopping number (times)	Dwell Time(sec) (NOTE2)	Limit
Normal hopping	V _{MAX}	DC 4.20 V	3.76	71.33	1	79	0.2771	0.4 seconds or less
	V _{NOM}	DC 3.70 V	3.76	71.33	1	79	0.2771	
	V _{MIN}	DC 3.33 V	3.76	71.33	1	79	0.2771	
AFH	V _{MAX}	DC 4.20 V	3.75	18.04	1	20	0.2776	
	V _{NOM}	DC 3.70 V	3.75	17.98	1	20	0.2767	
	V _{MIN}	DC 3.33 V	3.75	18.01	1	20	0.2771	
EDR, π/4-DQPSK modulation								
Normal hopping	V _{MAX}	DC 4.20 V	3.76	71.43	1	79	0.2775	0.4 seconds or less
	V _{NOM}	DC 3.70 V	3.76	71.43	1	79	0.2775	
	V _{MIN}	DC 3.33 V	3.76	71.43	1	79	0.2775	
AFH	V _{MAX}	DC 4.20 V	3.75	18.13	1	20	0.2788	
	V _{NOM}	DC 3.70 V	3.75	18.19	1	20	0.2798	
	V _{MIN}	DC 3.33 V	3.75	18.19	1	20	0.2798	
EDR, 8DPSK modulation								
Normal hopping	V _{MAX}	DC 4.20 V	3.76	71.43	1	79	0.2775	0.4 seconds or less
	V _{NOM}	DC 3.70 V	3.76	71.43	1	79	0.2775	
	V _{MIN}	DC 3.33 V	3.76	71.33	1	79	0.2771	
AFH	V _{MAX}	DC 4.20 V	3.75	18.19	1	20	0.2799	
	V _{NOM}	DC 3.70 V	3.75	18.22	1	20	0.2803	
	V _{MIN}	DC 3.33 V	3.75	18.19	1	20	0.2799	
Measurement uncertainty: ± 1.4 dB								

NOTE 1: Period (ms) = ON Time (ms) + OFF Time (ms)

NOTE 2: Result Dwell Time= { 0.4*(Spreading bandwidth / Symbol Rate) / (Period * Hopping number)} * ON Time

6.4.2 Test Data

PASS

Test Conditions (Conducted)			TEST RESULTS		
Temperature:	(25 ± 3) °C				
Rel. Humidity:	(52 ± 3) % R.H.		ON Time (ms)	OFF time (ms)	Burst Ratio
Basic, GFSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	2.89	0.88	0.7672872
	V _{NOM}	DC 3.70 V	2.89	0.88	0.7672872
	V _{MIN}	DC 3.33 V	2.89	0.88	0.7672872
AFH	V _{MAX}	DC 4.20 V	2.89	0.87	0.7693333
	V _{NOM}	DC 3.70 V	2.89	0.87	0.7693333
	V _{MIN}	DC 3.33 V	2.89	0.87	0.7693333
EDR, π/4-DQPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	2.89	0.88	0.7672872
	V _{NOM}	DC 3.70 V	2.89	0.88	0.7672872
	V _{MIN}	DC 3.33 V	2.89	0.88	0.7672872
AFH	V _{MAX}	DC 4.20 V	2.88	0.87	0.7690254
	V _{NOM}	DC 3.70 V	2.88	0.87	0.7690254
	V _{MIN}	DC 3.33 V	2.88	0.87	0.7690254
EDR, 8DPSK modulation					
Normal hopping	V _{MAX}	DC 4.20 V	2.89	0.88	0.7672872
	V _{NOM}	DC 3.70 V	2.89	0.88	0.7672872
	V _{MIN}	DC 3.33 V	2.89	0.88	0.7672872
AFH	V _{MAX}	DC 4.20 V	2.89	0.87	0.7693333
	V _{NOM}	DC 3.70 V	2.89	0.87	0.7693333
	V _{MIN}	DC 3.33 V	2.89	0.87	0.7693333
Measurement uncertainty: ± 1.4 dB					

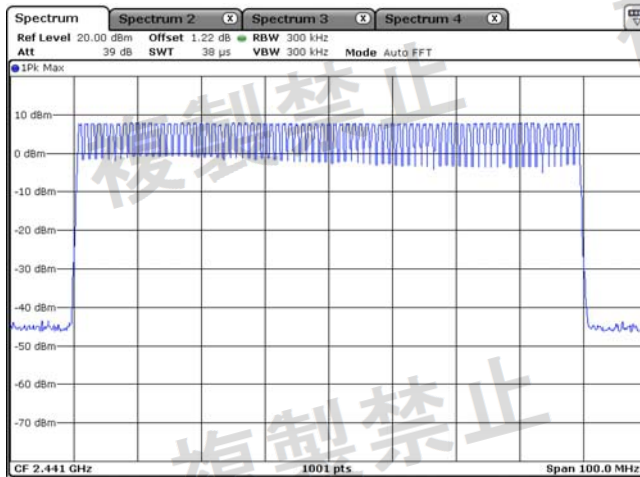
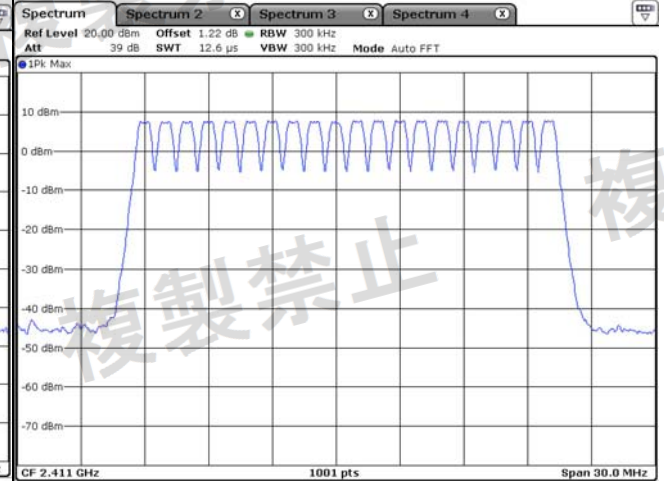
6.4.3 Test Plot (Normal Voltage)

Basic, GFSK modulation

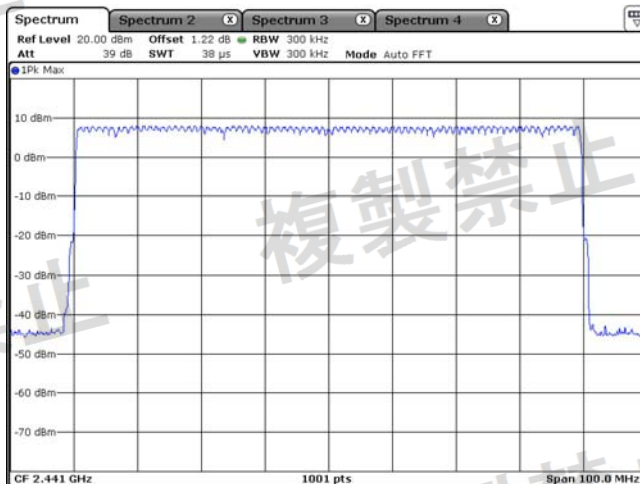
Normal Hopping

Hopping number

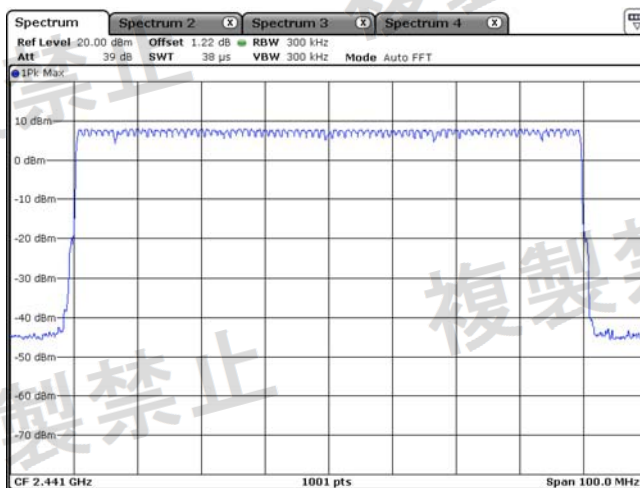
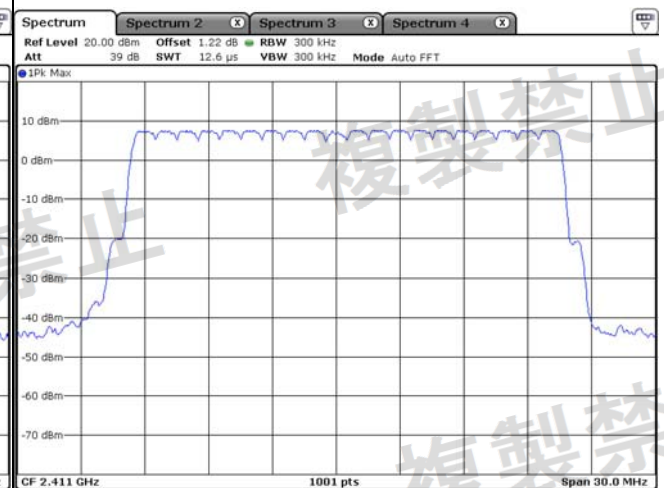
AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK

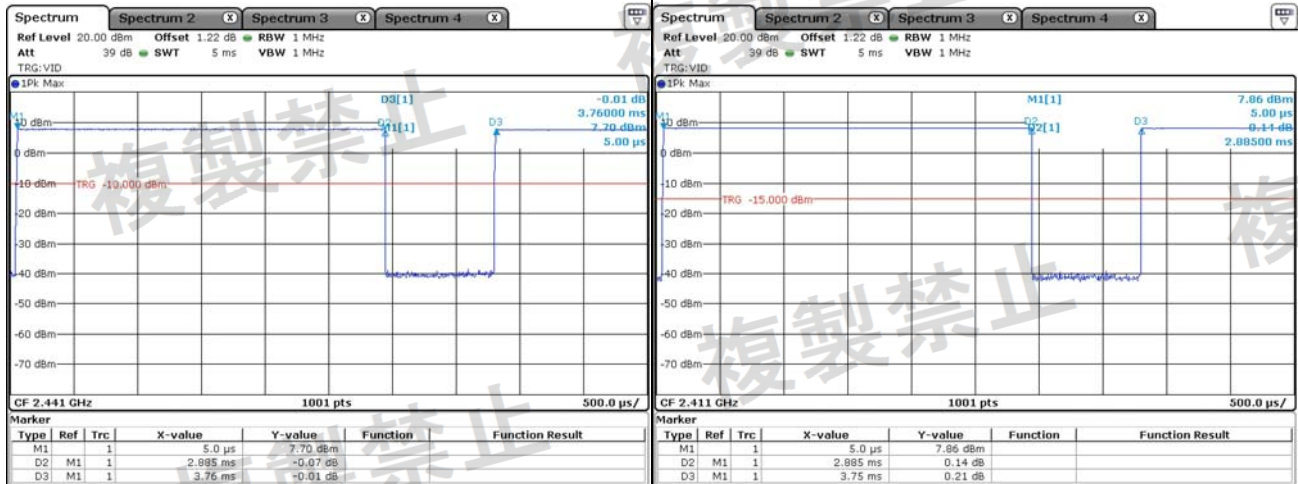


Basic, GFSK modulation

Normal Hopping

ON/OFF TIME

AFH



EDR, $\pi/4$ -DQPSK



EDR, 8DPSK



6.5. Transmitter spurious emissions

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6.5.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Basic, GFSK modulation		(MHz)	(dBm/MHz)	
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2381.10	-50.81	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2383.50	-49.21	
	V _{MIN} DC 3.33 V	2378.80	-50.37	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-30.60	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-31.45	
	V _{MIN} DC 3.33 V	2399.99	-29.92	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2485.95	-47.15	
	V _{NOM} DC 3.70 V	2483.51	-47.31	
	V _{MIN} DC 3.33 V	2485.10	-46.39	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7218.50	-43.97	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7308.50	-44.05	
	V _{MIN} DC 3.33 V	7248.50	-43.95	
Basic, GFSK modulation [AFH]				
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2385.80	-49.50	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2383.50	-49.53	
	V _{MIN} DC 3.33 V	2385.80	-49.42	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-30.33	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-30.09	
	V _{MIN} DC 3.33 V	2399.99	-30.44	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2484.73	-55.45	
	V _{NOM} DC 3.70 V	2486.30	-54.90	
	V _{MIN} DC 3.33 V	2489.58	-54.74	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7218.50	-43.93	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7208.50	-43.73	
	V _{MIN} DC 3.33 V	7258.50	-43.87	

EDR, $\pi/4$ -DQPSK modulation

30 MHz ~ 2387 MHz	V_{MAX}	DC 4.20 V	2376.40	-51.14	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	2385.80	-49.59	
	V_{MIN}	DC 3.33 V	2381.10	-49.42	
2387 MHz ~ 2400 MHz	V_{MAX}	DC 4.20 V	2399.99	-17.73	25 μ W/MHz($\approx$ -16dBm) or less
	V_{NOM}	DC 3.70 V	2399.99	-18.06	
	V_{MIN}	DC 3.33 V	2399.99	-18.47	
2483.5 ~ 2496.5 MHz	V_{MAX}	DC 4.20 V	2483.51	-43.47	25 μ W/MHz($\approx$ -16dBm) or less
	V_{NOM}	DC 3.70 V	2483.51	-42.24	
	V_{MIN}	DC 3.33 V	2483.51	-43.58	
2496.5 ~ 12500 MHz	V_{MAX}	DC 4.20 V	7258.50	-42.49	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	7218.50	-42.97	
	V_{MIN}	DC 3.33 V	7218.50	-42.81	

EDR, $\pi/4$ -DQPSK modulation [AFH]

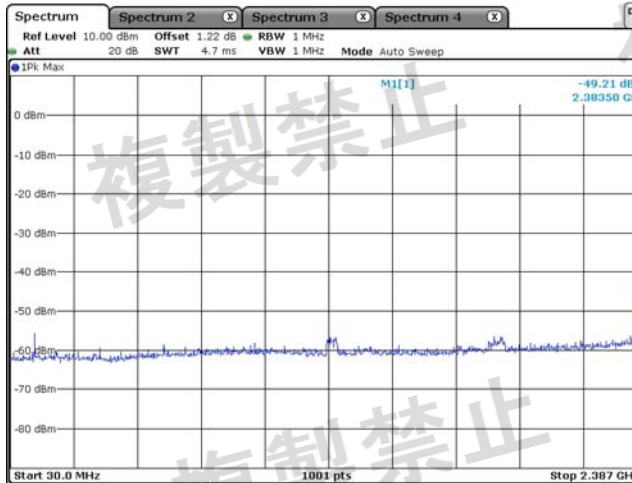
30 MHz ~ 2387 MHz	V_{MAX}	DC 4.20 V	2378.80	-49.82	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	2381.10	-50.36	
	V_{MIN}	DC 3.33 V	2385.80	-48.87	
2387 MHz ~ 2400 MHz	V_{MAX}	DC 4.20 V	2399.99	-17.75	25 μ W/MHz($\approx$ -16dBm) or less
	V_{NOM}	DC 3.70 V	2399.99	-17.40	
	V_{MIN}	DC 3.33 V	2399.99	-17.59	
2483.5 ~ 2496.5 MHz	V_{MAX}	DC 4.20 V	2492.79	-54.57	25 μ W/MHz($\approx$ -16dBm) or less
	V_{NOM}	DC 3.70 V	2484.81	-55.28	
	V_{MIN}	DC 3.33 V	2493.34	-53.87	
2496.5 ~ 12500 MHz	V_{MAX}	DC 4.20 V	7258.50	-43.13	2.5 μ W/MHz($\approx$ -26dBm) or less
	V_{NOM}	DC 3.70 V	7218.50	-42.82	
	V_{MIN}	DC 3.33 V	7228.50	-42.87	

EDR, 8DPSK modulation					
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	2369.30	-51.54	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM}	DC 3.70 V	2383.50	-49.35	
	V _{MIN}	DC 3.33 V	2381.10	-49.52	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2399.99	-17.29	25 μW/MHz(≒ -16dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-17.56	
	V _{MIN}	DC 3.33 V	2399.99	-17.70	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2483.51	-39.48	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM}	DC 3.70 V	2483.51	-39.55	
	V _{MIN}	DC 3.33 V	2483.51	-38.44	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7238.50	-42.66	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM}	DC 3.70 V	7278.50	-42.64	
	V _{MIN}	DC 3.33 V	7258.50	-42.24	
EDR, 8DPSK modulation [AFH]					
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	2385.80	-50.32	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM}	DC 3.70 V	2374.00	-50.11	
	V _{MIN}	DC 3.33 V	2383.50	-50.06	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2399.99	-17.25	25 μW/MHz(≒ -16dBm) or less
	V _{NOM}	DC 3.70 V	2399.99	-17.38	
	V _{MIN}	DC 3.33 V	2399.99	-17.22	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2486.23	-54.22	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM}	DC 3.70 V	2483.51	-54.63	
	V _{MIN}	DC 3.33 V	2483.82	-54.30	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7228.50	-42.49	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM}	DC 3.70 V	7258.50	-42.36	
	V _{MIN}	DC 3.33 V	7258.50	-42.87	
Measurement uncertainty: ± 3.0					

6.5.2 Test Plot (Normal Voltage)

Transmitter spurious emissions - (Basic, GFSK modulation)

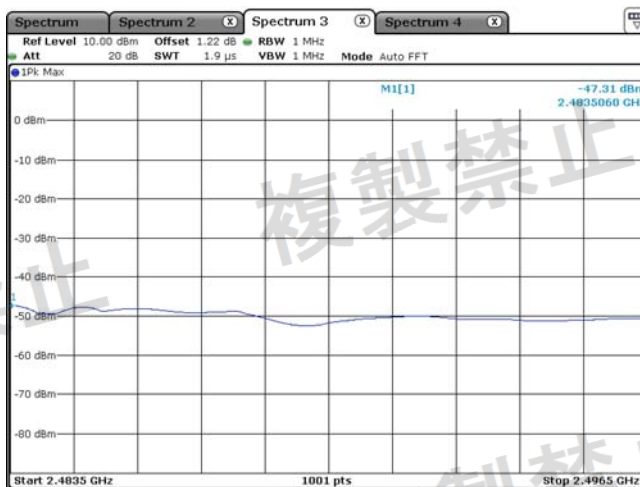
30 ~ 2387 MHz



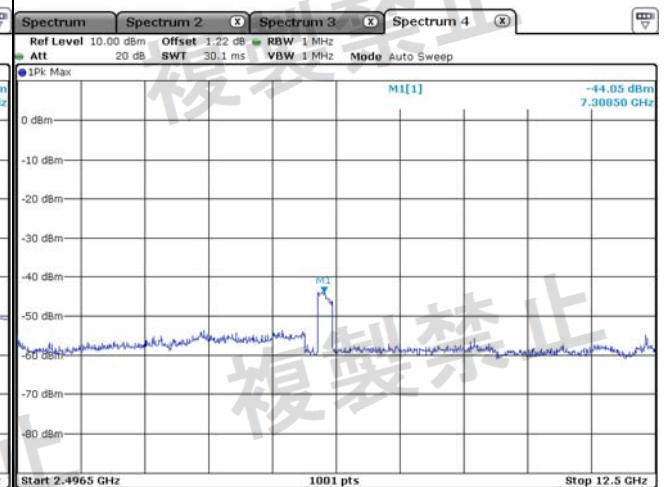
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

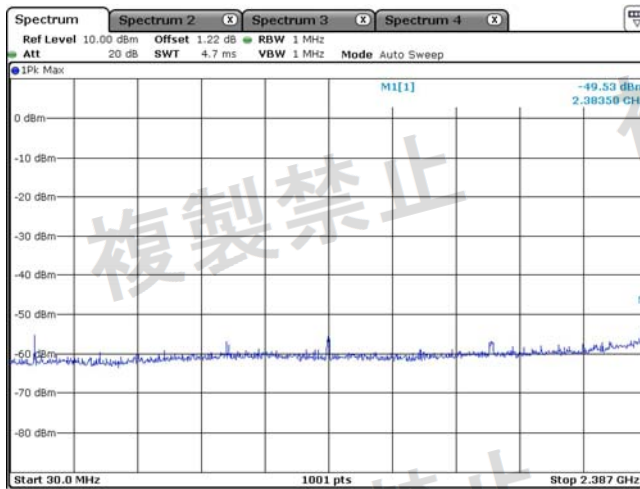


2496.5 ~ 12500 MHz

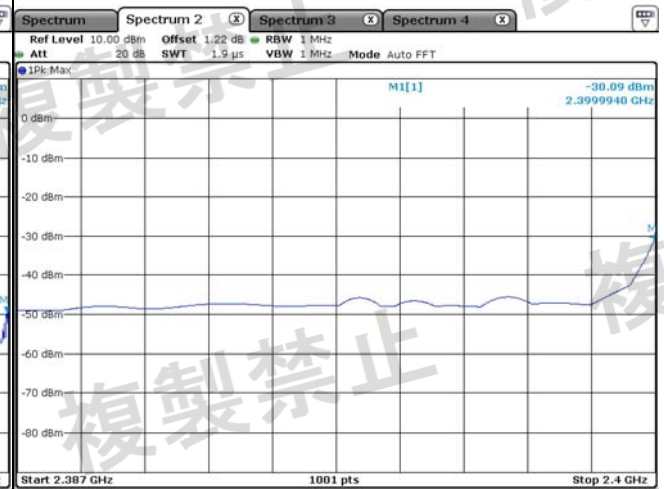


Transmitter spurious emissions - (Basic, GFSK modulation[AFH])

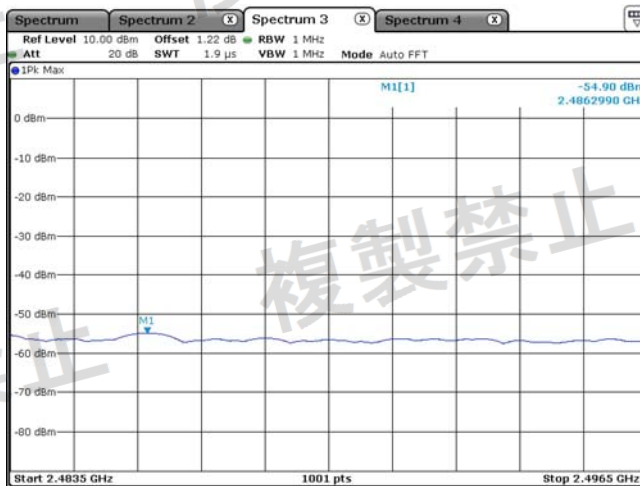
30 ~ 2387 MHz



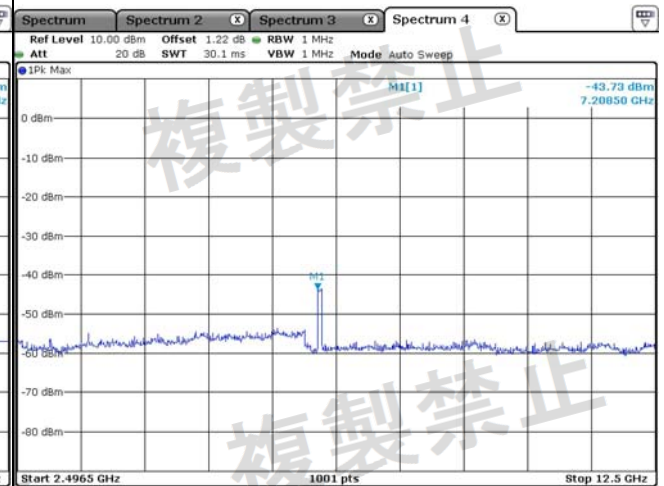
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

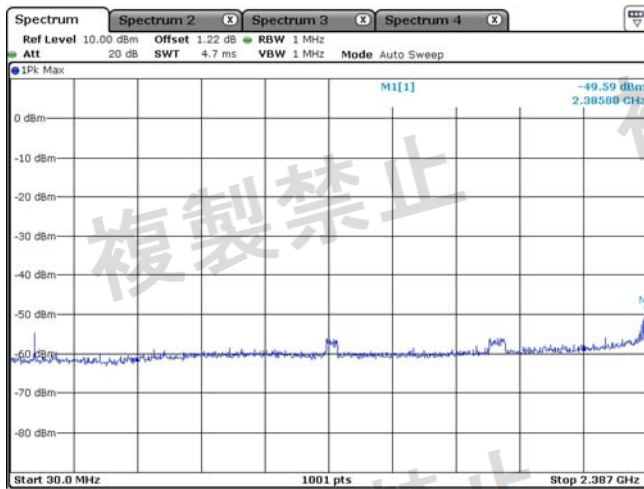


2496.5 ~ 12500 MHz

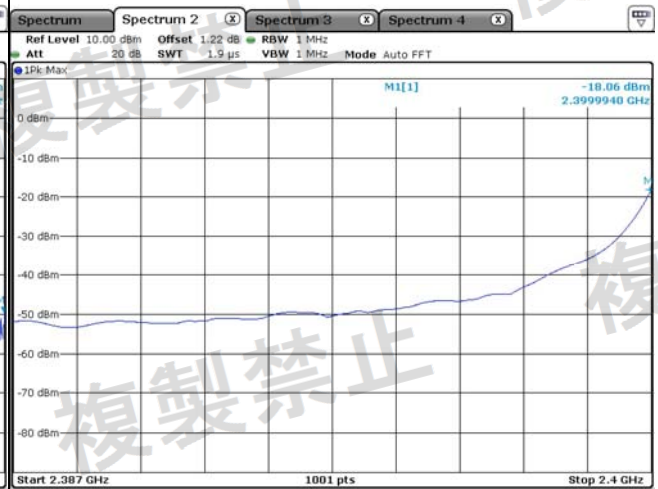


Transmitter spurious emissions - (EDR, $\pi/4$ -DQPSK modulation)

30 ~ 2387 MHz



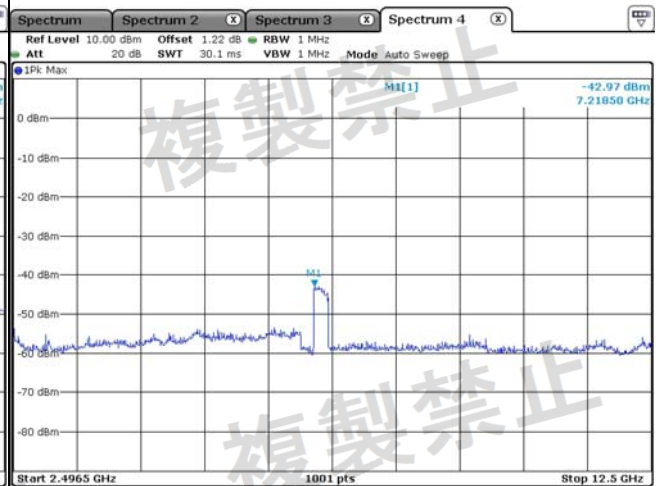
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

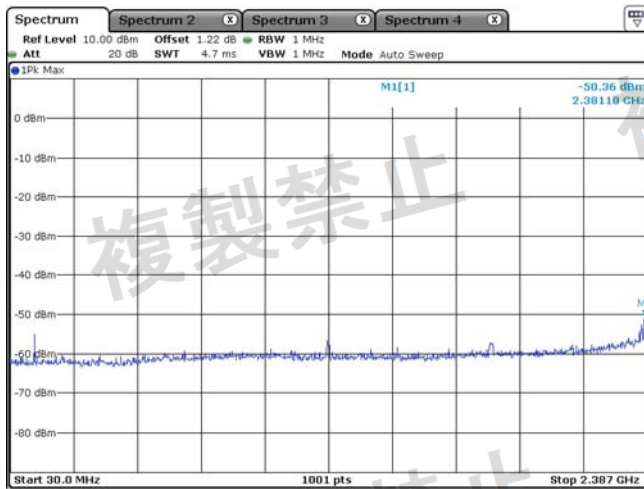


2496.5 ~ 12500 MHz

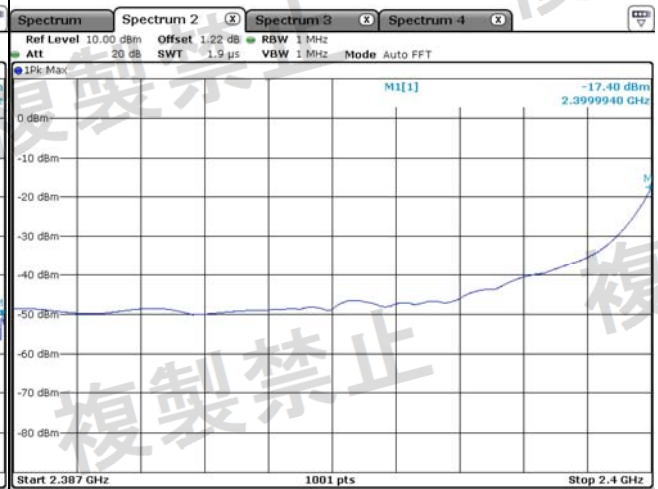


Transmitter spurious emissions - (EDR, $\pi/4$ -DQPSK modulation [AFH])

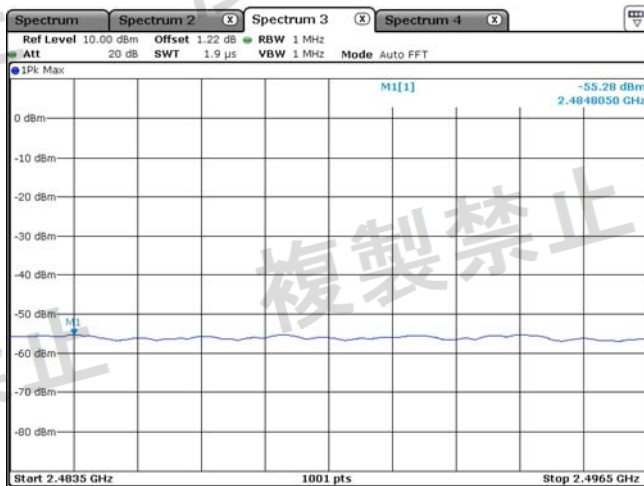
30 ~ 2387 MHz



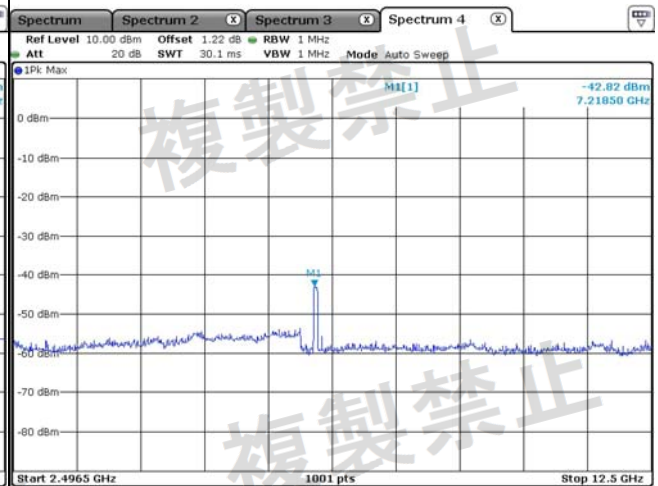
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

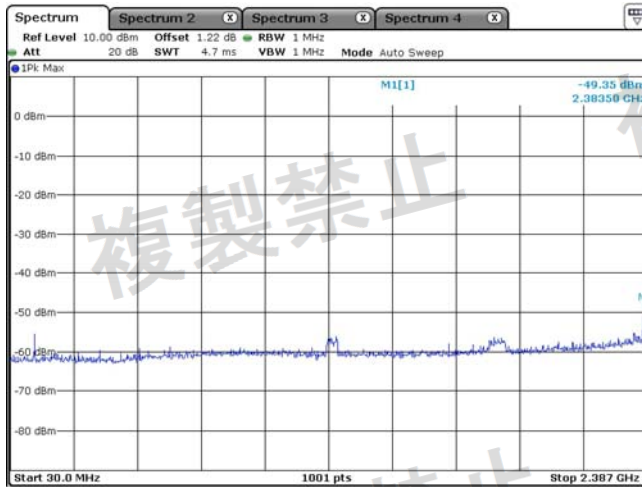


2496.5 ~ 12500 MHz



Transmitter spurious emissions - (EDR, 8DPSK modulation)

30 ~ 2387 MHz



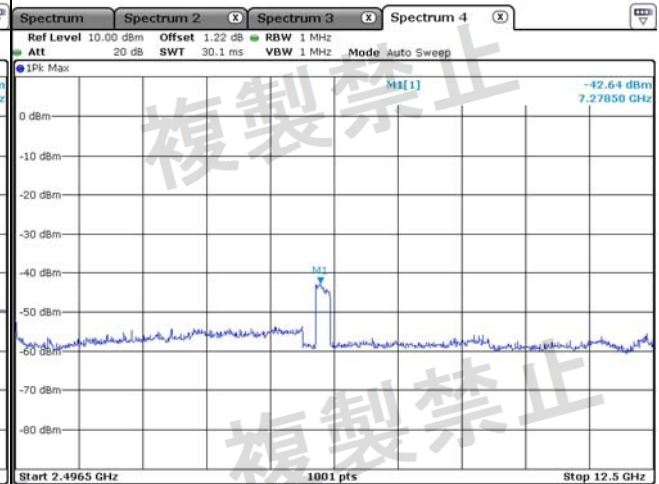
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

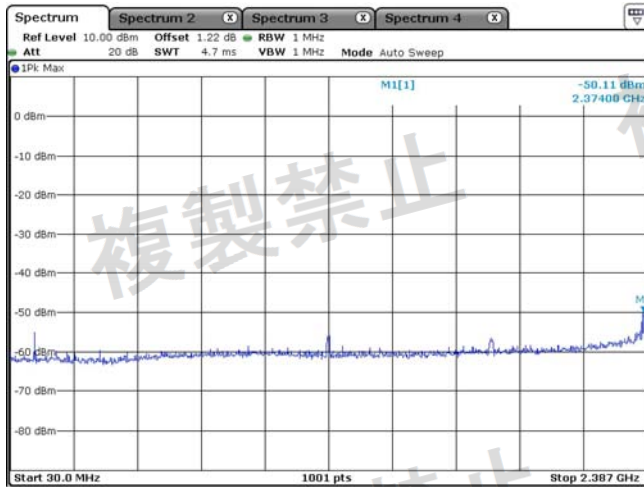


2496.5 ~ 12500 MHz



Transmitter spurious emissions - (EDR, 8DPSK modulation [AFH])

30 ~ 2387 MHz



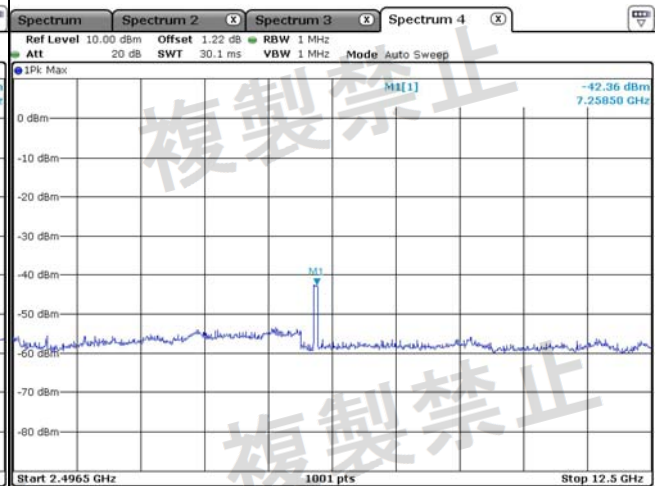
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



6.6. Receiver spurious emissions

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6.6.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Basic, GFSK modulation		(MHz)	(dBm/MHz)	
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	62.46	-70.12	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	65.37	-68.59	
	V _{MIN} DC 3.33 V	64.40	-72.02	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6486.00	-63.88	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6888.00	-64.21	
	V _{MIN} DC 3.33 V	6520.00	-63.72	
Basic, GFSK modulation [AFH]				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	64.40	-74.08	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	63.43	-73.23	
	V _{MIN} DC 3.33 V	63.43	-72.60	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6945.00	-64.41	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6991.00	-64.28	
	V _{MIN} DC 3.33 V	5819.00	-64.27	
EDR, π/4-DQPSK modulation				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	64.40	-67.87	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	65.37	-70.56	
	V _{MIN} DC 3.33 V	65.37	-68.02	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6830.00	-64.05	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6865.00	-63.79	
	V _{MIN} DC 3.33 V	6245.00	-64.07	
EDR, π/4-DQPSK modulation [AFH]				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	64.40	-73.15	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	65.37	-74.07	
	V _{MIN} DC 3.33 V	64.40	-74.70	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6451.00	-63.10	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6980.00	-63.94	
	V _{MIN} DC 3.33 V	6486.00	-64.20	

EDR, 8DPSK modulation

30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	63.43	-67.97	4nW(≡ -53.98dBm) or less
	V _{NOM}	DC 3.70 V	64.40	-67.64	
	V _{MIN}	DC 3.33 V	64.40	-67.62	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6761.00	-63.76	20nW(≡ -46.99dBm) or less
	V _{NOM}	DC 3.70 V	6773.00	-63.88	
	V _{MIN}	DC 3.33 V	6417.00	-63.99	

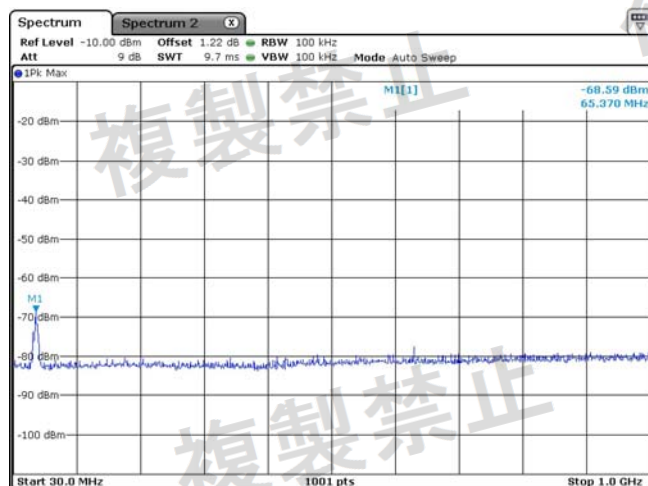
EDR, 8DPSK modulation [AFH]

30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	65.37	-61.29	4nW(≡ -53.98dBm) or less
	V _{NOM}	DC 3.70 V	67.31	-62.32	
	V _{MIN}	DC 3.33 V	64.40	-63.99	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6440.00	-64.21	20nW(≡ -46.99dBm) or less
	V _{NOM}	DC 3.70 V	6980.00	-64.06	
	V _{MIN}	DC 3.33 V	6486.00	-63.86	

6.6.2 Test Plot (Normal Voltage)

Receiver spurious emissions - Basic, GFSK modulation

30 ~ 1000 MHz

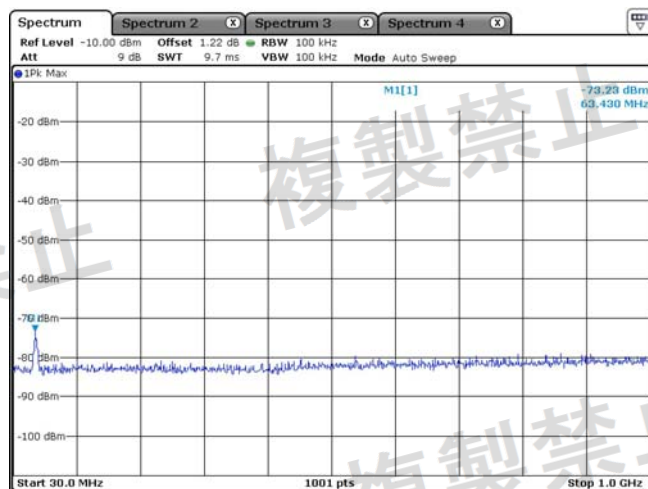


1000 ~ 12500 MHz

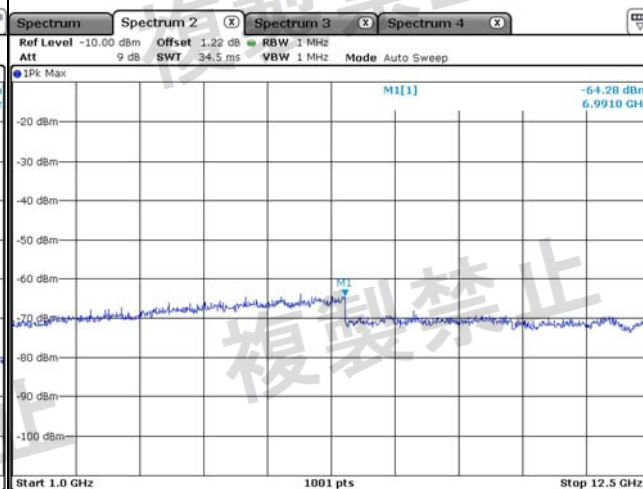


Basic, GFSK modulation [AFH]

30 ~ 1000 MHz

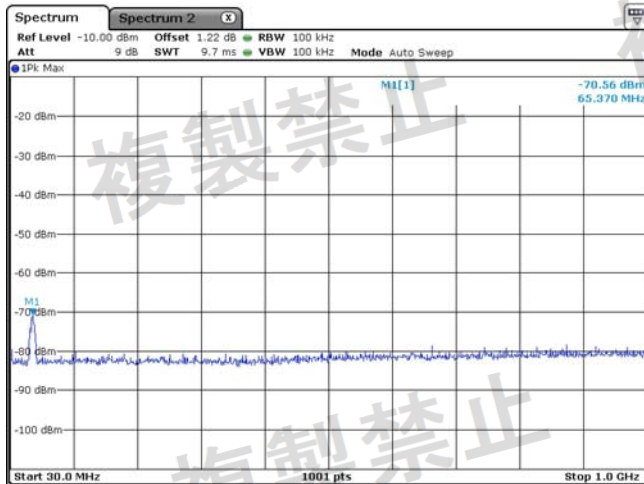


1000 ~ 12500 MHz

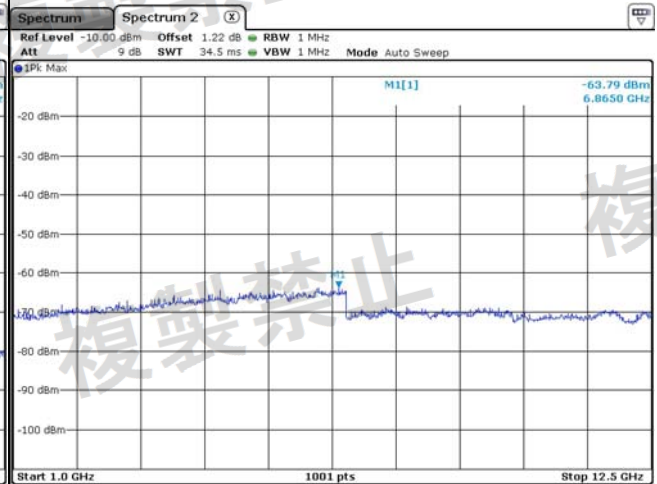


**Receiver spurious emissions -
EDR, $\pi/4$ -DQPSK modulation**

30 ~ 1000 MHz

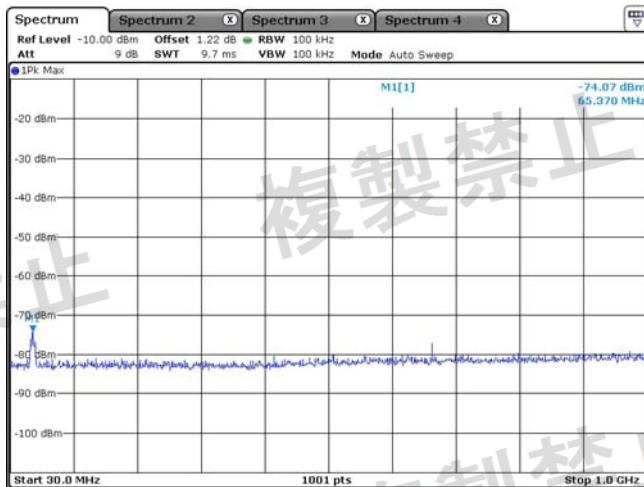


1000 ~ 12500 MHz

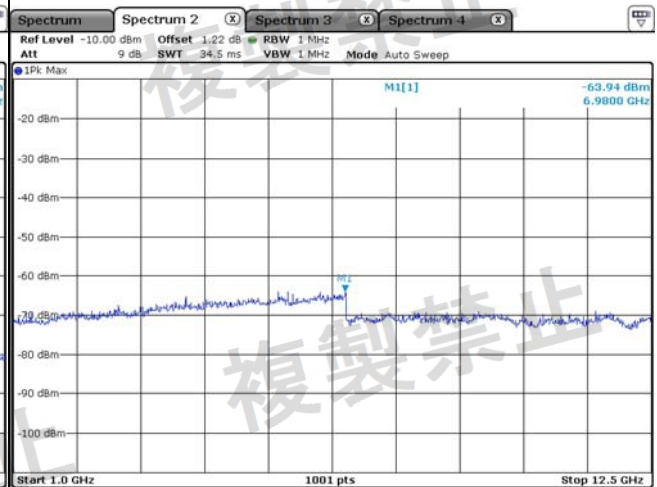


EDR, $\pi/4$ -DQPSK modulation [AFH]

30 ~ 1000 MHz

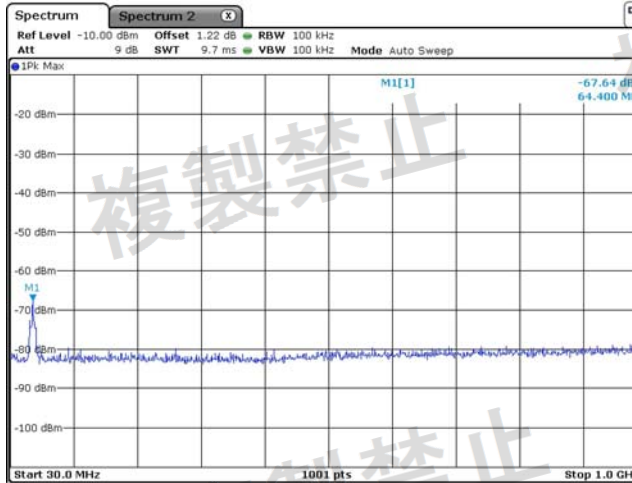


1000 ~ 12500 MHz

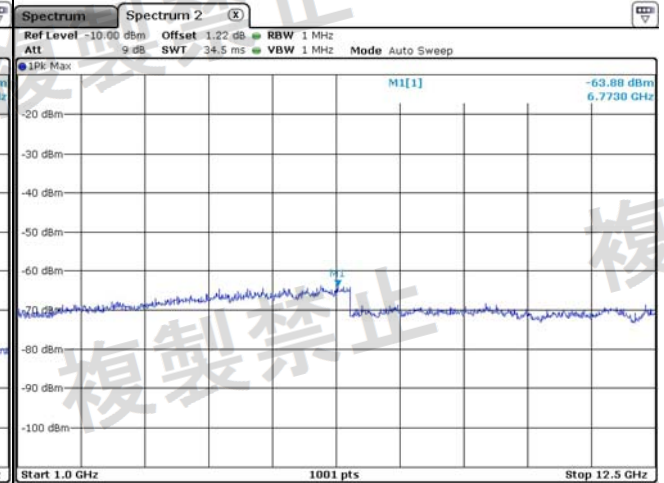


**Receiver spurious emissions -
EDR, 8DPSK modulation**

30 ~ 1000 MHz

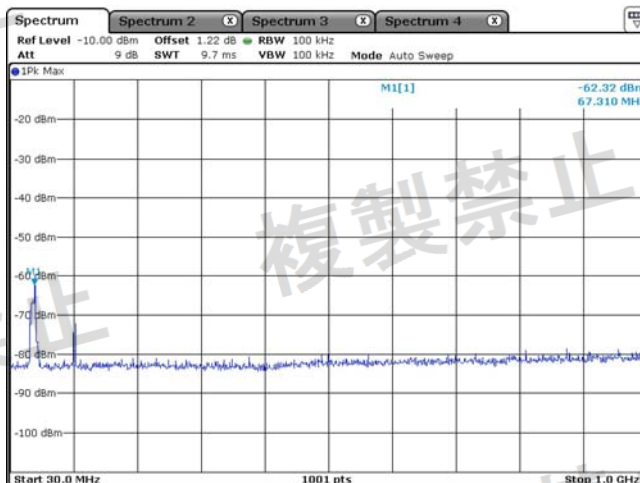


1000 ~ 12500 MHz

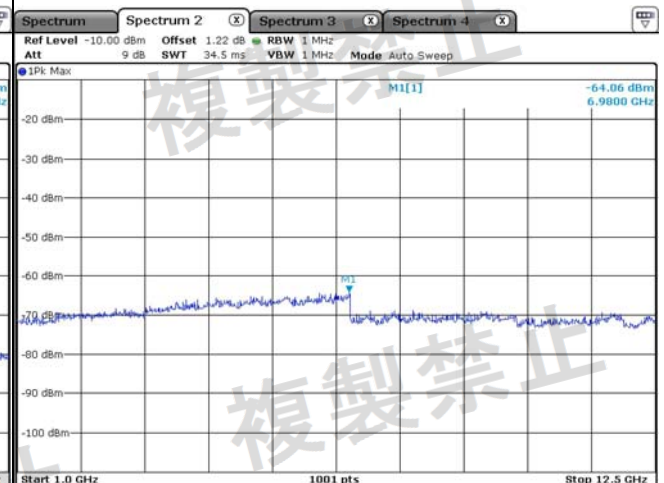


EDR, 8DPSK modulation [AFH]

30 ~ 1000 MHz



1000 ~ 12500 MHz



6.7. Anti-Interference

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6.7.1 Test Data

PASS

Test Conditions (Conducted)		TEST RESULTS
Temperature:	(25 ± 3) °C	PASS
Rel. Humidity:	(52 ± 3) % R.H.	

7 Measurement results (LE 1Mbps) (Left Earphone)

7.1. Frequency tolerance

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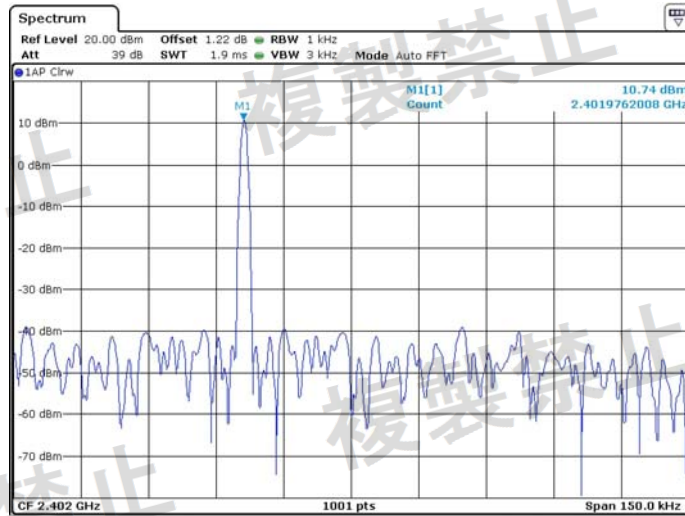
7.1.1 Test Data

PASS

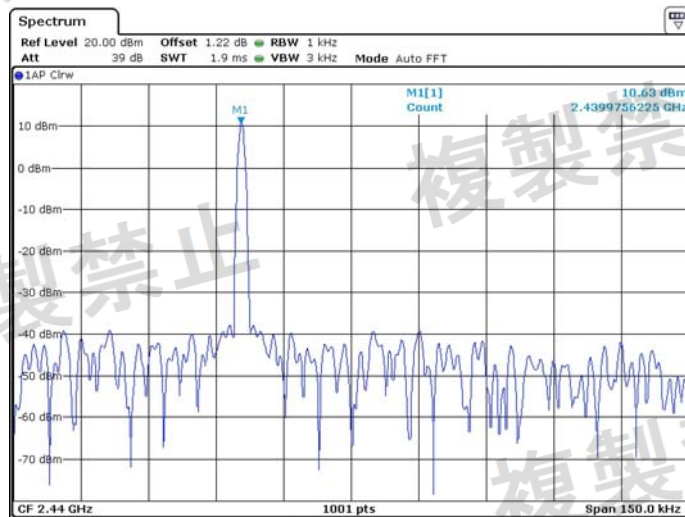
Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low Frequency: 2402 MHz	V _{MAX} DC 4.20 V	2.4019763492	-9.85	± 50
	V _{NOM} DC 3.70 V	2.4019762008	-9.91	
	V _{MIN} DC 3.33 V	2.4019761786	-9.92	
Middle Frequency: 2440 MHz	V _{MAX} DC 4.20 V	2.4399756271	-9.99	
	V _{NOM} DC 3.70 V	2.4399756225	-9.99	
	V _{MIN} DC 3.33 V	2.4399756255	-9.99	
High Frequency: 2480 MHz	V _{MAX} DC 4.20 V	2.4799752846	-9.97	
	V _{NOM} DC 3.70 V	2.4799752800	-9.97	
	V _{MIN} DC 3.33 V	2.4799752818	-9.97	
Measurement uncertainty: ± 2 × 10 ⁻⁷				

7.1.2 Test Plot (Normal Voltage)

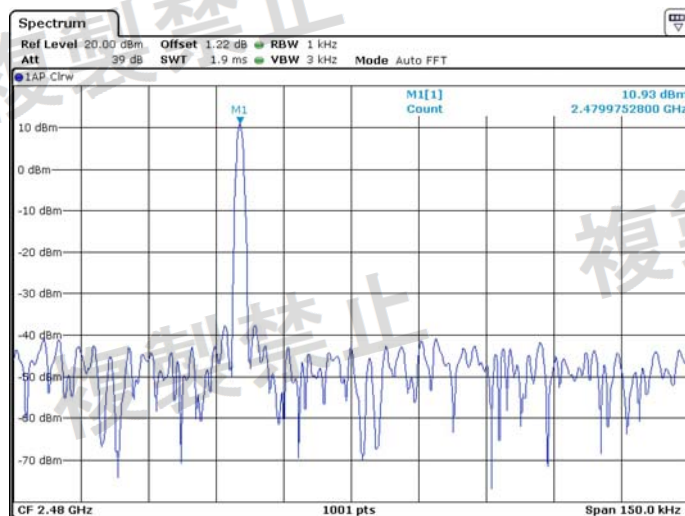
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



7.2. Occupied bandwidth (99%)

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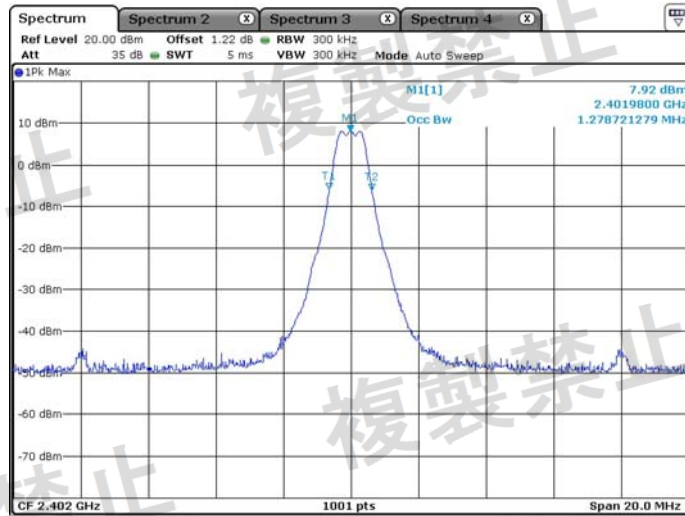
7.2.1 Test Data

PASS

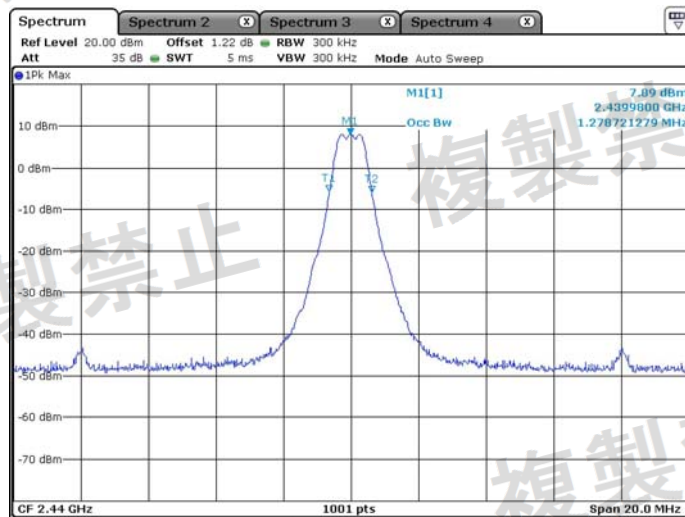
Test Conditions (Conducted)				
Temperature:		(25 ± 3) °C	TEST RESULTS	
Rel. Humidity:		(52 ± 3) % R.H.	Occupied bandwidth (MHz)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	1.28	26MHz or below
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
Measurement uncertainty: ± 3 × 10 ⁻⁴				

7.2.2 Test Plot (Normal Voltage)

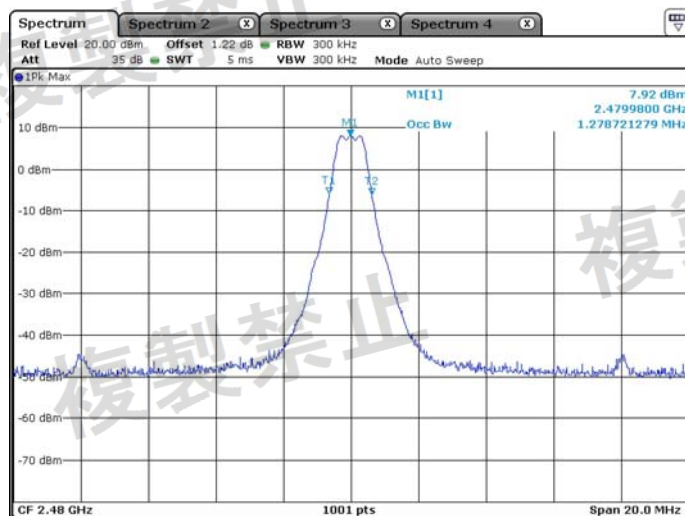
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



7.3. Antenna power

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7.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):			F1D: 0.007 W			
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (52 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW) (NOTE1)	Tolerance (%) (NOTE2)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	8.39	6.902	-1.39	(Antenna Power) 10 mW or less (tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.39	6.902	-1.39	
	V _{MIN}	DC 3.33 V	8.39	6.902	-1.39	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	8.45	6.998	-0.02	
	V _{NOM}	DC 3.70 V	8.44	6.982	-0.25	
	V _{MIN}	DC 3.33 V	8.45	6.998	-0.02	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	8.33	6.808	-2.75	
	V _{NOM}	DC 3.70 V	8.34	6.823	-2.52	
	V _{MIN}	DC 3.33 V	8.34	6.823	-2.52	
Measurement uncertainty: ± 1.4 dB						

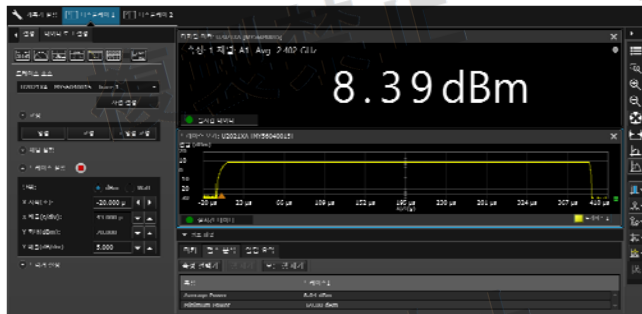
** Measured value (dBm) is the average output power of the transmitter; the power meter reading and corrected for the cable loss. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the peak power meter.

NOTE 1: Tolerance (%) in normal mode = 100 × (Antenna power (mW) - Declared power (mW)) / Declared power (mW)

7.3.2 Test Plot (Normal Voltage)

Measured

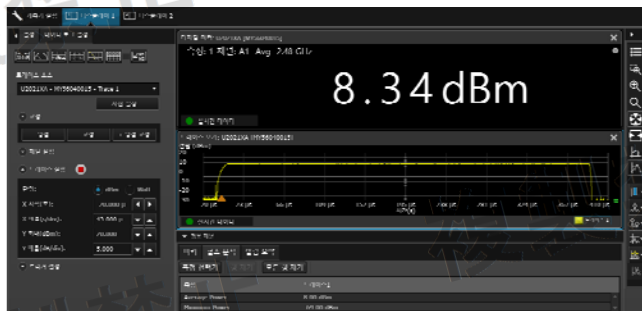
2402 MHz



2440 MHz

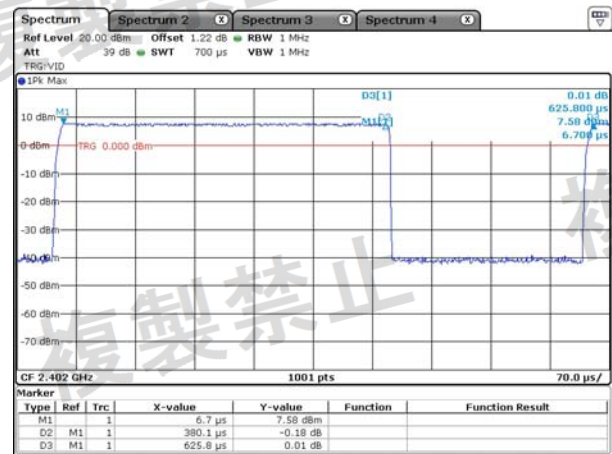


2480 MHz

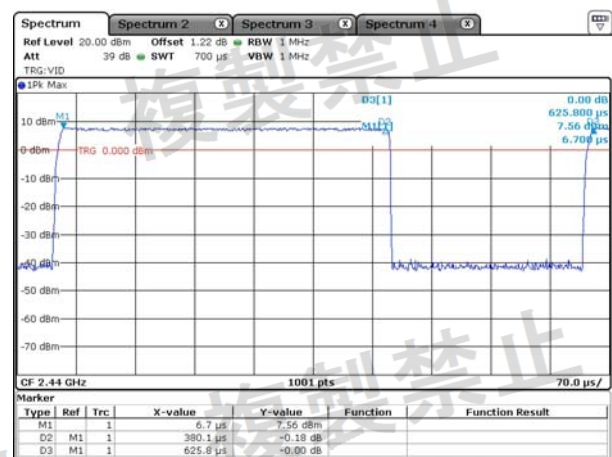


On/ Off Time

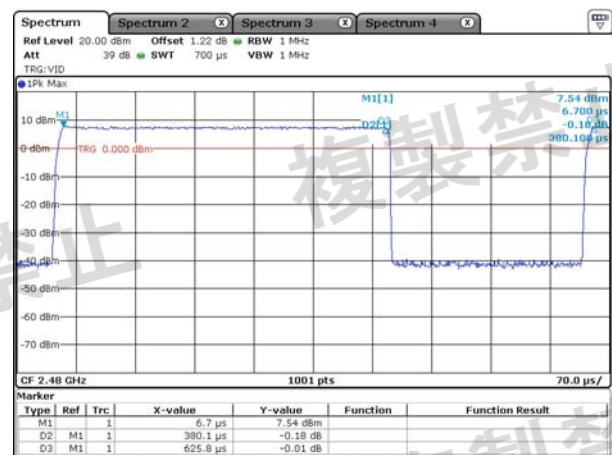
2402 MHz



2440 MHz



2480 MHz



7.4. Transmitter spurious emissions

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7.4.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency (MHz)	Measured (dBm/MHz)	Limit
Low Frequency: 2402 MHz				
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2369.30	-53.71	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2383.50	-52.93	
	V _{MIN} DC 3.33 V	2369.30	-53.07	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-27.85	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-27.83	
	V _{MIN} DC 3.33 V	2399.99	-27.55	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2490.47	-53.93	
	V _{NOM} DC 3.70 V	2486.01	-54.28	
	V _{MIN} DC 3.33 V	2483.75	-54.18	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7208.50	-40.91	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7208.50	-40.59	
	V _{MIN} DC 3.33 V	7208.50	-40.85	
Middle Frequency: 2440 MHz				
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2376.40	-53.50	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2381.10	-56.54	
	V _{MIN} DC 3.33 V	2329.30	-54.46	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2389.16	-54.73	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2395.14	-52.99	
	V _{MIN} DC 3.33 V	2395.29	-54.17	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2487.71	-54.05	
	V _{NOM} DC 3.70 V	2486.20	-53.04	
	V _{MIN} DC 3.33 V	2488.51	-54.75	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7318.50	-44.02	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7318.50	-44.18	
	V _{MIN} DC 3.33 V	7328.50	-44.03	

High Frequency: 2480 MHz

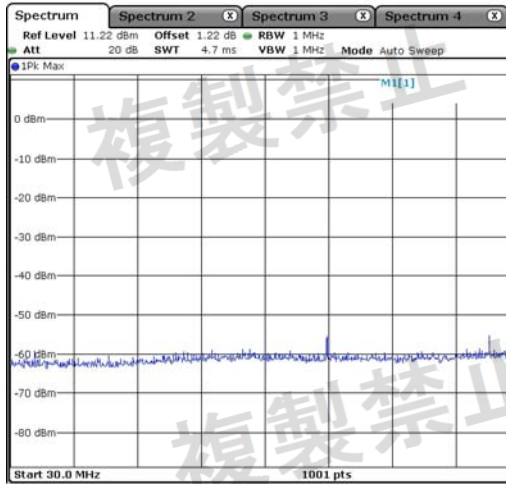
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	1860.70	-54.85	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	1860.70	-54.57	
	V _{MIN}	DC 3.33 V	1860.70	-55.79	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2396.97	-55.35	25 μW/MHz(≐ -16dBm) or less
	V _{NOM}	DC 3.70 V	2395.84	-55.06	
	V _{MIN}	DC 3.33 V	2387.54	-55.25	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2483.51	-44.16	
	V _{NOM}	DC 3.70 V	2483.51	-43.40	
	V _{MIN}	DC 3.33 V	2483.51	-42.98	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7438.50	-46.17	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	7438.50	-46.04	
	V _{MIN}	DC 3.33 V	7438.50	-45.61	
Measurement uncertainty: ± 3.0					

7.4.2 Test Plot (Normal Voltage)

Transmitter spurious emissions

Low Channel (2402 MHz)

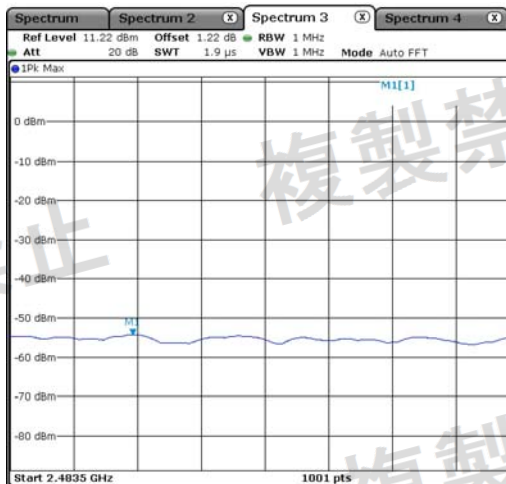
30 ~ 2387 MHz



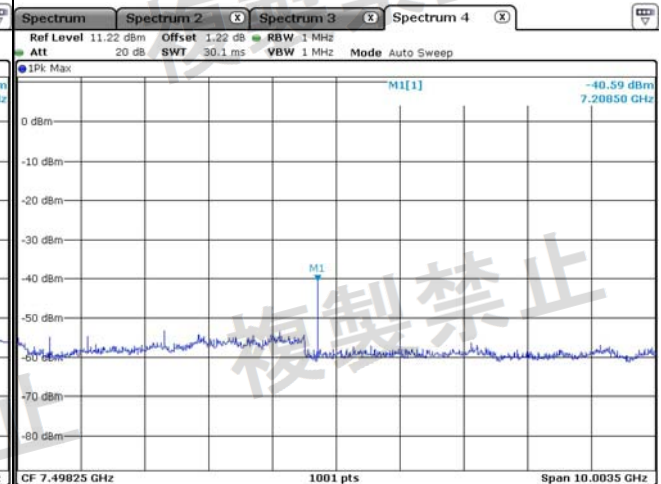
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



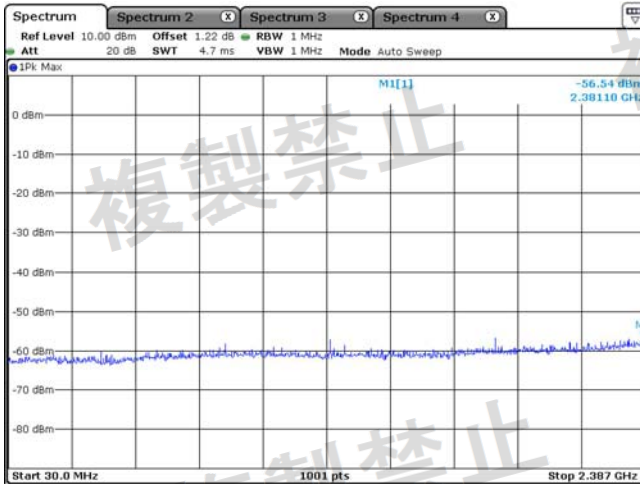
2496.5 ~ 12500 MHz



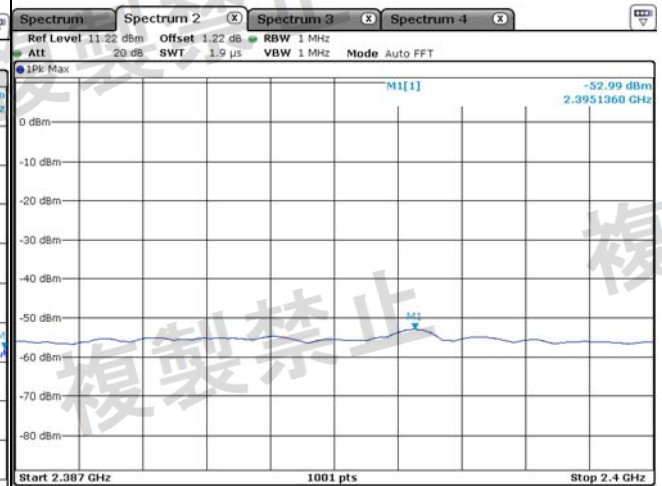
Transmitter spurious emissions

Middle Channel (2440 MHz)

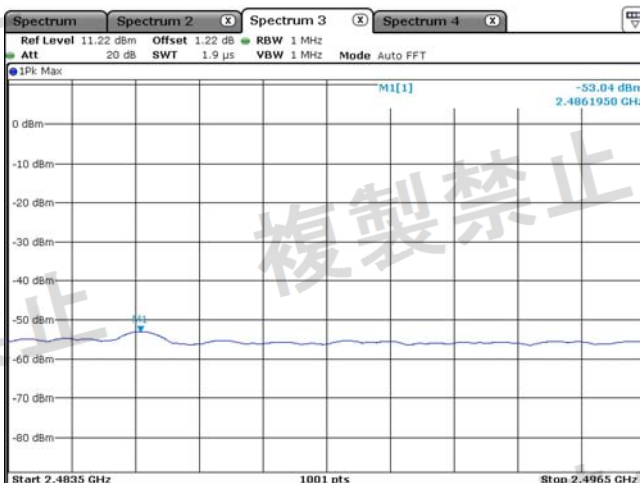
30 ~ 2387 MHz



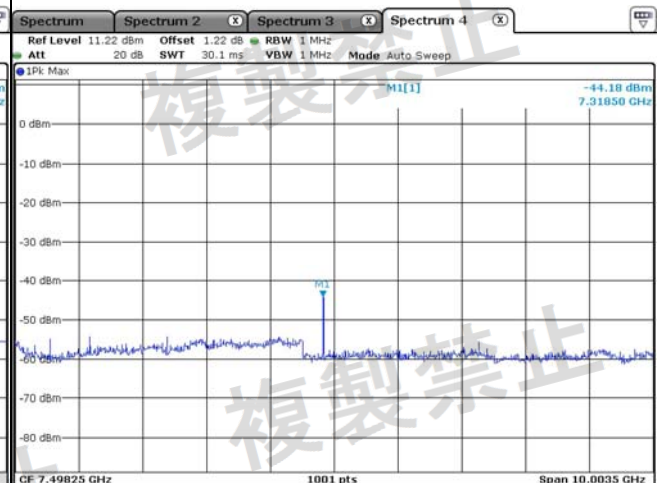
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



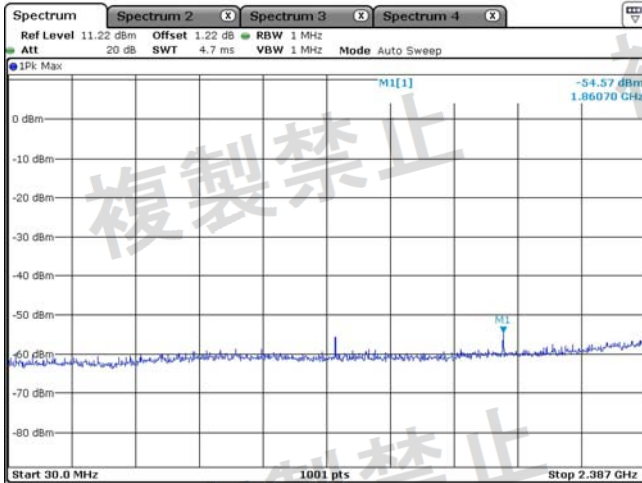
2496.5 ~ 12500 MHz



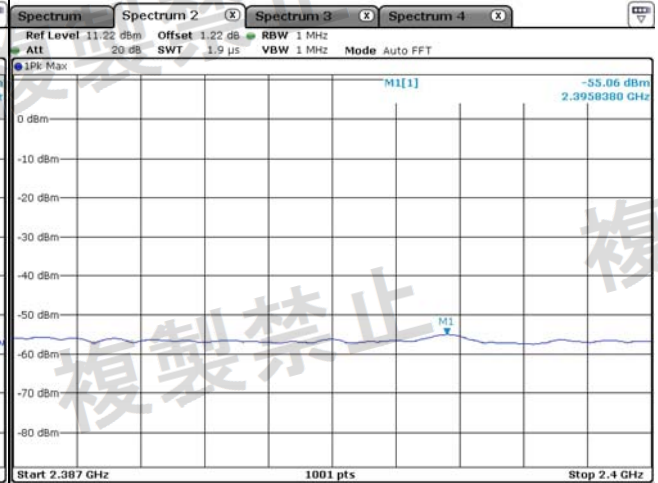
Transmitter spurious emissions

High Channel (2480 MHz)

30 ~ 2387 MHz



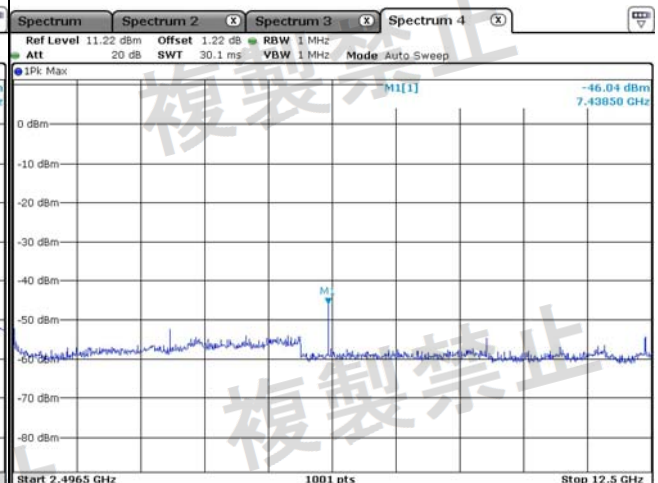
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



7.5. Receiver spurious emissions

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7.5.1 Test Data

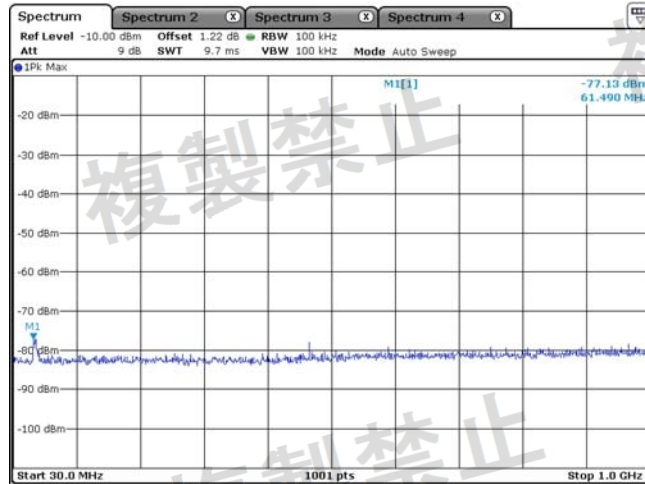
PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Low Frequency: 2402 MHz		(MHz)	(dBm/MHz)	
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	65.37	-76.47	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	61.49	-77.13	
	V _{MIN} DC 3.33 V	63.43	-76.90	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	5842.00	-64.21	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6991.00	-64.16	
	V _{MIN} DC 3.33 V	5337.00	-64.41	
Middle Frequency: 2440 MHz				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	60.52	-78.26	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	60.52	-78.59	
	V _{MIN} DC 3.33 V	60.52	-78.30	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6727.00	-63.92	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6911.00	-63.46	
	V _{MIN} DC 3.33 V	6474.00	-64.00	
High Frequency: 2480 MHz				
30 MHz ~ 1000 MHz	V _{MAX} DC 4.20 V	59.56	-76.32	4nW(≡ -53.98dBm) or less
	V _{NOM} DC 3.70 V	59.56	-76.46	
	V _{MIN} DC 3.33 V	59.56	-76.64	
1000 MHz ~ 12500 MHz	V _{MAX} DC 4.20 V	6991.00	-63.67	20nW(≡ -46.99dBm) or less
	V _{NOM} DC 3.70 V	6980.00	-64.18	
	V _{MIN} DC 3.33 V	6899.00	-64.59	

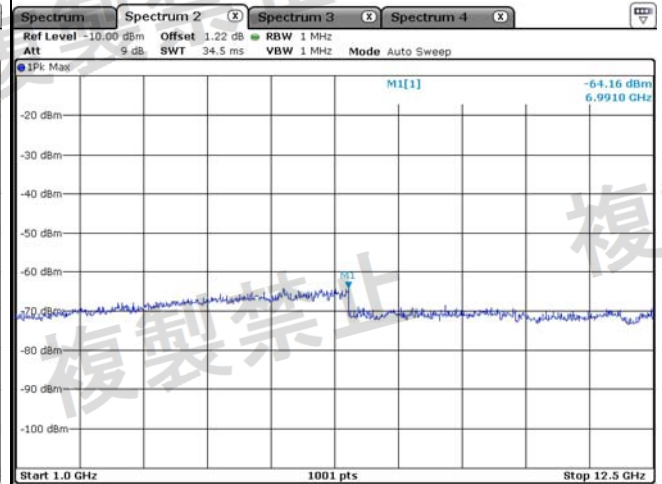
7.5.2 Test Plot (Normal Voltage)

Receiver spurious emissions

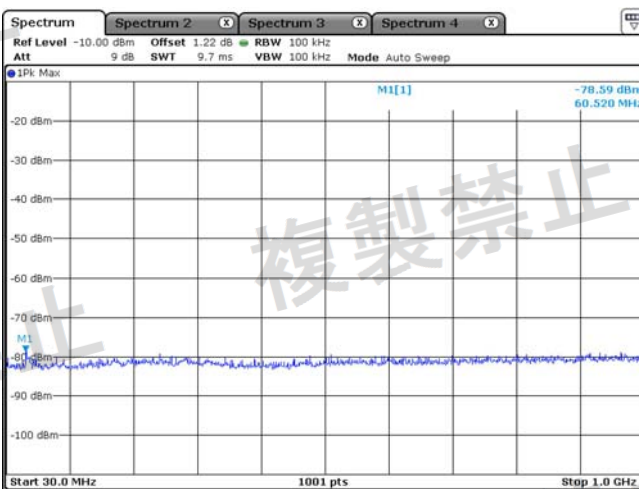
Low Channel (2402 MHz), 30 ~ 1000 MHz



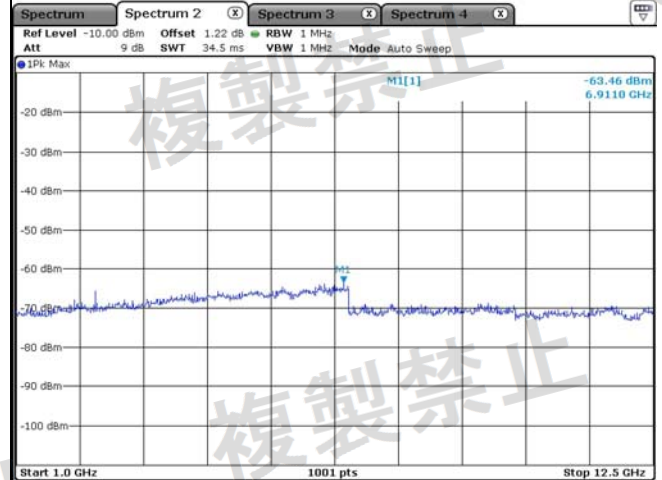
1000 ~ 12500 MHz



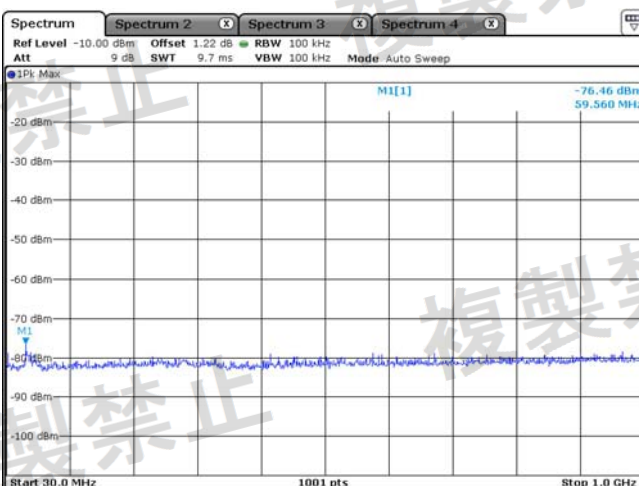
Middle Channel (2440 MHz), 10 ~ 1000 MHz



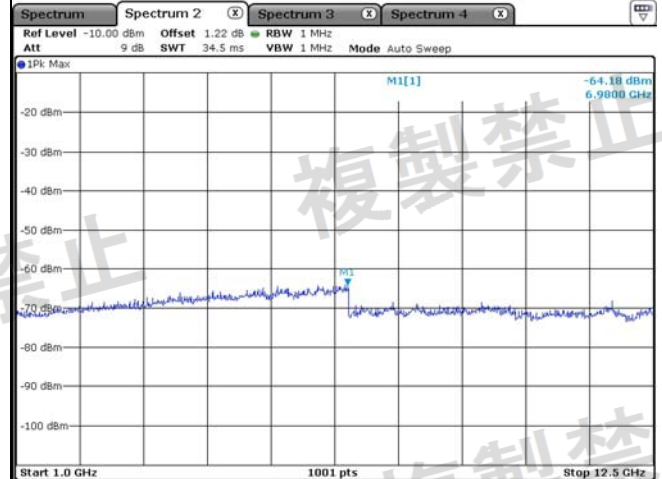
1000 ~ 12500 MHz



High Channel (2480 MHz), 10 ~ 1000 MHz



1000 ~ 12500 MHz



7.6. Anti-Interference

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7.6.1 Test Data

PASS

Test Conditions (Conducted)		TEST RESULTS
Temperature:	(25 ± 3) °C	PASS
Rel. Humidity:	(52 ± 3) % R.H.	

8 Measurement results (LE 1Mbps) (Right Earphone)

8.1. Frequency tolerance

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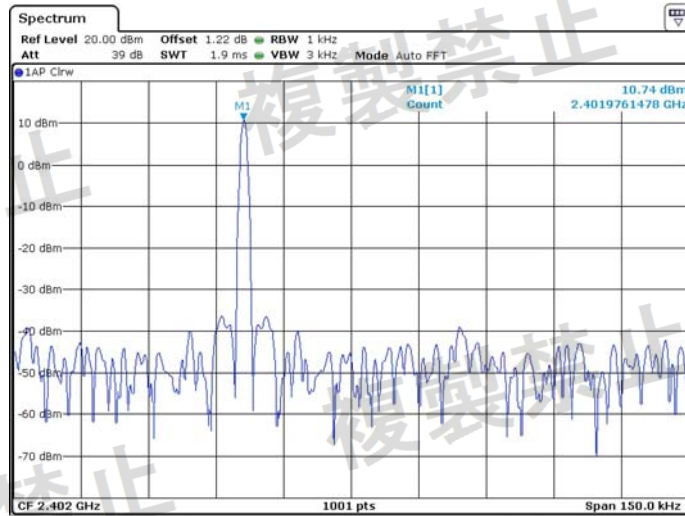
8.1.1 Test Data

PASS

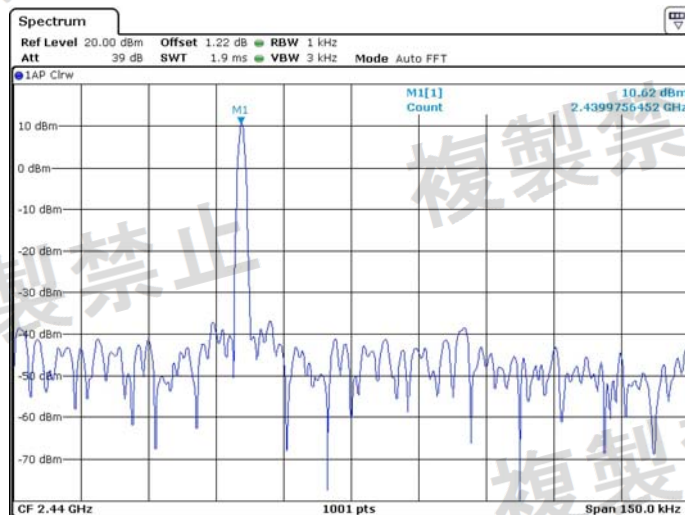
Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low Frequency: 2402 MHz	V _{MAX} DC 4.20 V	2.4019761661	-9.92	± 50
	V _{NOM} DC 3.70 V	2.4019761478	-9.93	
	V _{MIN} DC 3.33 V	2.4019761299	-9.94	
Middle Frequency: 2440 MHz	V _{MAX} DC 4.20 V	2.4399756303	-9.99	
	V _{NOM} DC 3.70 V	2.4399756452	-9.98	
	V _{MIN} DC 3.33 V	2.4399756430	-9.98	
High Frequency: 2480 MHz	V _{MAX} DC 4.20 V	2.4799752830	-9.97	
	V _{NOM} DC 3.70 V	2.4799752821	-9.97	
	V _{MIN} DC 3.33 V	2.4799752781	-9.97	
Measurement uncertainty: ± 2 × 10 ⁻⁷				

8.1.2 Test Plot (Normal Voltage)

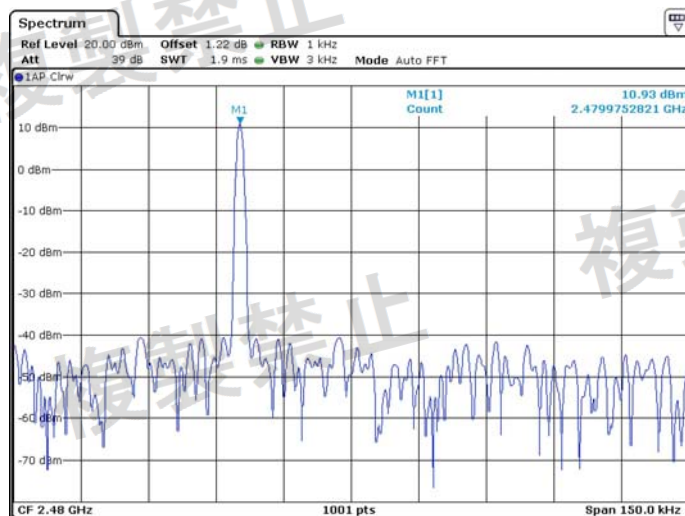
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



8.2. Occupied bandwidth (99%)

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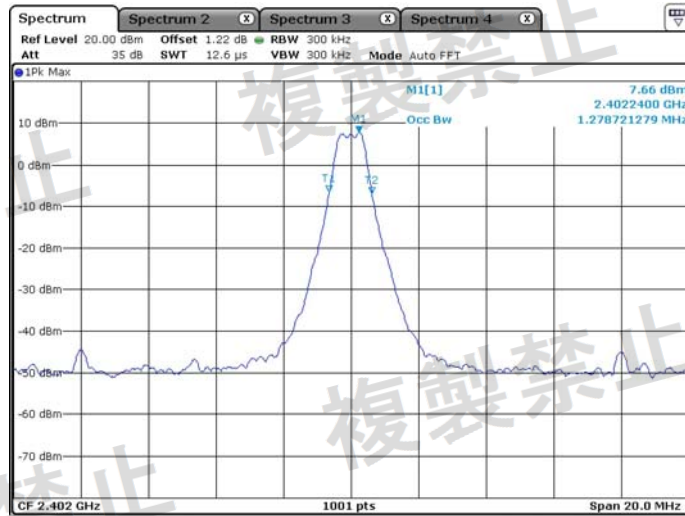
8.2.1 Test Data

PASS

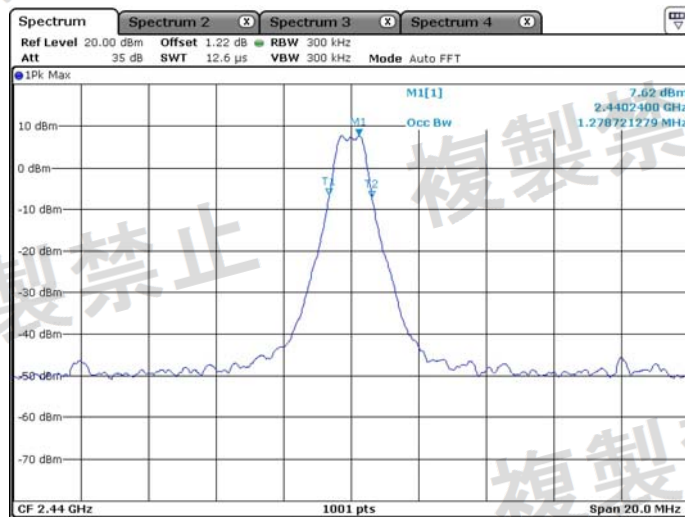
Test Conditions (Conducted)				
Temperature:		(25 ± 3) °C	TEST RESULTS	
Rel. Humidity:		(52 ± 3) % R.H.	Occupied bandwidth (MHz)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	1.28	26MHz or below
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
Measurement uncertainty: ± 3 × 10 ⁻⁴				

8.2.2 Test Plot (Normal Voltage)

Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



8.3. Antenna power

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8.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):			F1D: 0.007 W			
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (52 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW) (NOTE1)	Tolerance (%) (NOTE2)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	8.40	6.918	-1.17	(Antenna Power) 10 mW or less (tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.39	6.902	-1.39	
	V _{MIN}	DC 3.33 V	8.39	6.902	-1.39	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	8.44	6.982	-0.25	
	V _{NOM}	DC 3.70 V	8.44	6.982	-0.25	
	V _{MIN}	DC 3.33 V	8.44	6.982	-0.25	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	8.34	6.823	-2.52	
	V _{NOM}	DC 3.70 V	8.34	6.823	-2.52	
	V _{MIN}	DC 3.33 V	8.34	6.823	-2.52	
Measurement uncertainty: ± 1.4 dB						

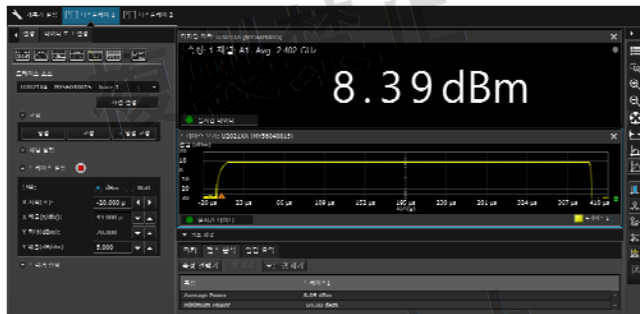
** Measured value (dBm) is the average output power of the transmitter; the power meter reading and corrected for the cable loss. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the peak power meter.

NOTE 1: Tolerance (%) in normal mode = 100 × (Antenna power (mW) - Declared power (mW)) / Declared power (mW)

8.3.2 Test Plot (Normal Voltage)

Measured

2402 MHz



2440 MHz

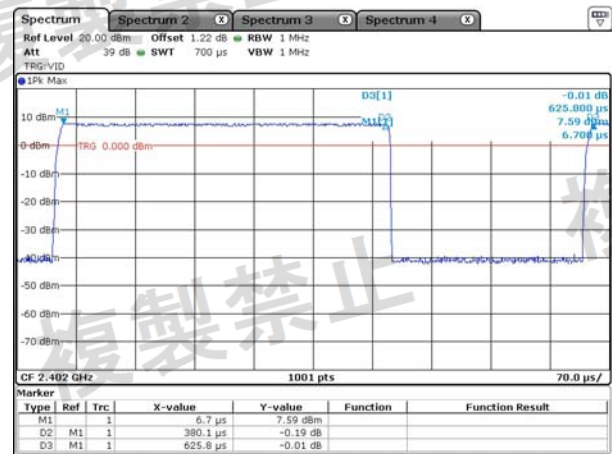


2480 MHz

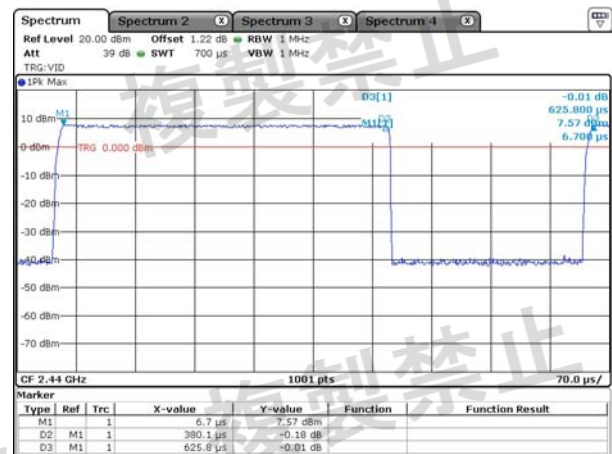


On/ Off Time

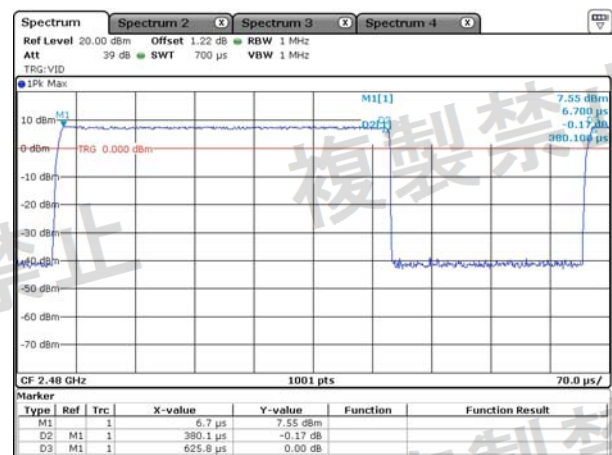
2402 MHz



2440 MHz



2480 MHz



8.4. Transmitter spurious emissions

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8.4.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured	Limit
Low Frequency: 2402 MHz		(MHz)	(dBm/MHz)	
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2385.80	-49.76	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2385.80	-49.80	
	V _{MIN} DC 3.33 V	2385.80	-49.36	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-24.93	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-25.29	
	V _{MIN} DC 3.33 V	2399.99	-25.08	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2494.20	-55.48	
	V _{NOM} DC 3.70 V	2483.96	-55.81	
	V _{MIN} DC 3.33 V	2491.70	-55.92	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7208.50	-44.14	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7208.50	-44.30	
	V _{MIN} DC 3.33 V	7208.50	-43.97	
Middle Frequency: 2440 MHz				
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	2385.80	-54.48	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	2376.40	-56.53	
	V _{MIN} DC 3.33 V	2385.80	-56.04	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2398.66	-52.89	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.51	-51.91	
	V _{MIN} DC 3.33 V	2395.84	-52.42	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2483.51	-53.36	
	V _{NOM} DC 3.70 V	2489.65	-52.79	
	V _{MIN} DC 3.33 V	2483.51	-52.27	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7318.50	-44.27	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7318.50	-44.22	
	V _{MIN} DC 3.33 V	7318.50	-44.35	

High Frequency: 2480 MHz

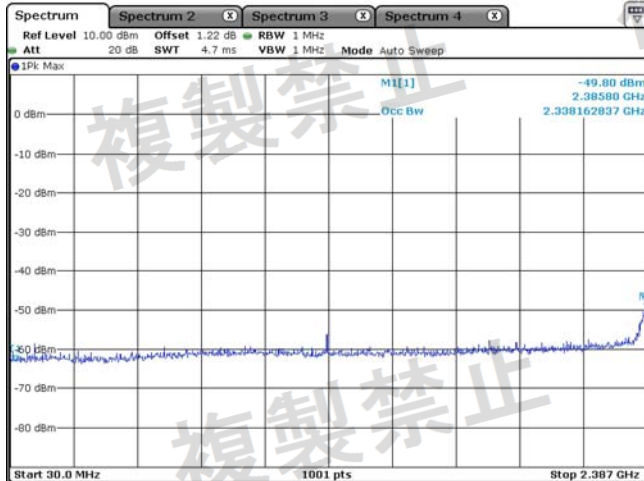
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	1860.70	-56.68	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	1860.70	-56.75	
	V _{MIN}	DC 3.33 V	1860.70	-56.16	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2387.24	-56.41	25 μW/MHz(≐ -16dBm) or less
	V _{NOM}	DC 3.70 V	2396.21	-55.52	
	V _{MIN}	DC 3.33 V	2387.77	-56.41	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2483.51	-44.77	
	V _{NOM}	DC 3.70 V	2483.51	-45.20	
	V _{MIN}	DC 3.33 V	2483.51	-44.97	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7438.50	-45.59	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	7438.50	-46.44	
	V _{MIN}	DC 3.33 V	7438.50	-46.42	
Measurement uncertainty: ± 3.0					

8.4.2 Test Plot (Normal Voltage)

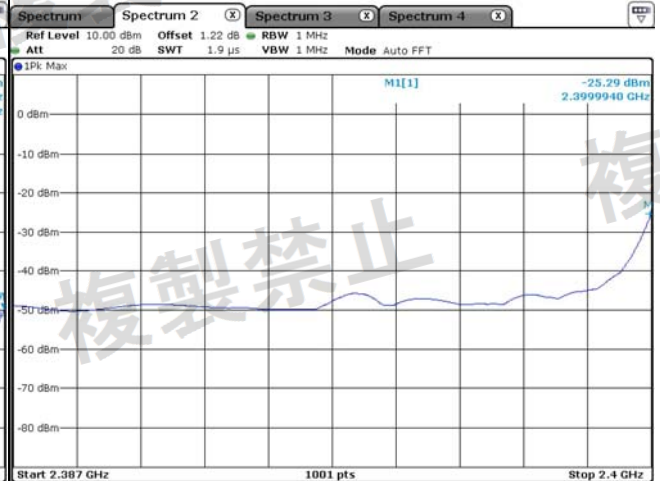
Transmitter spurious emissions

Low Channel (2402 MHz)

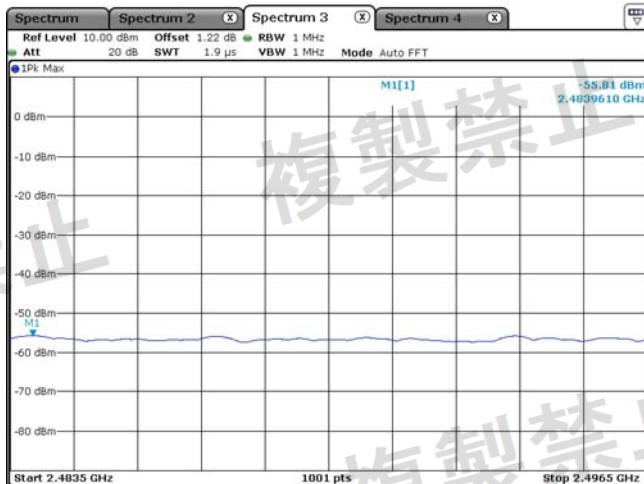
30 ~ 2387 MHz



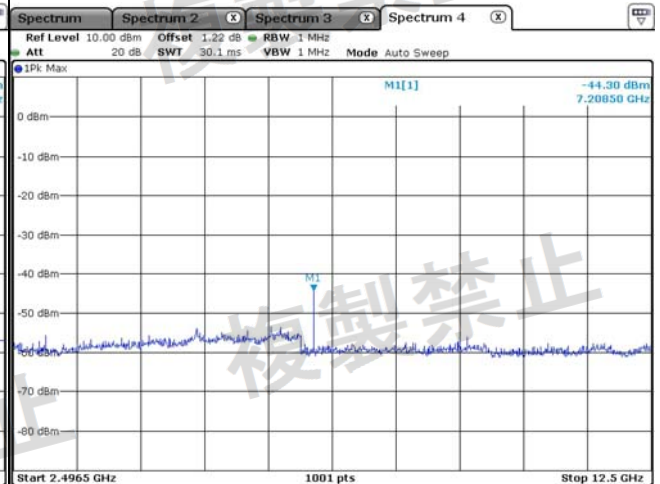
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



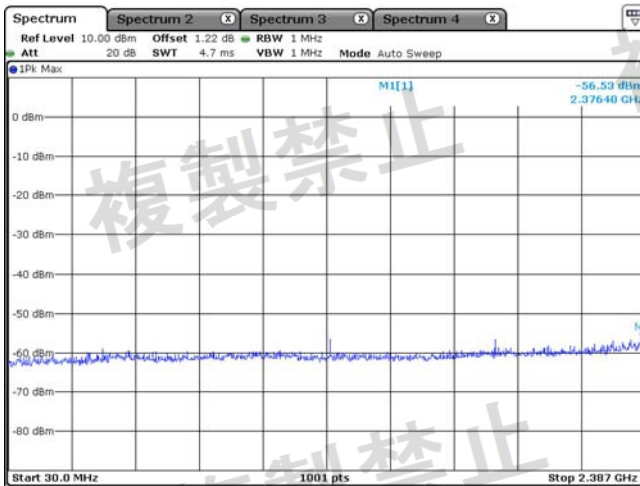
2496.5 ~ 12500 MHz



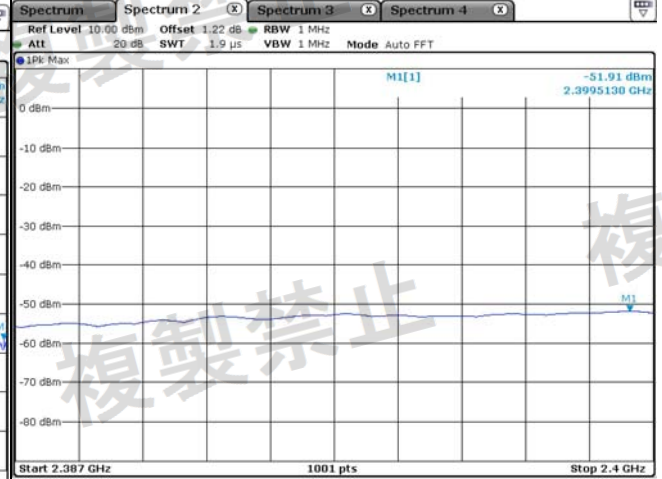
Transmitter spurious emissions

Middle Channel (2440 MHz)

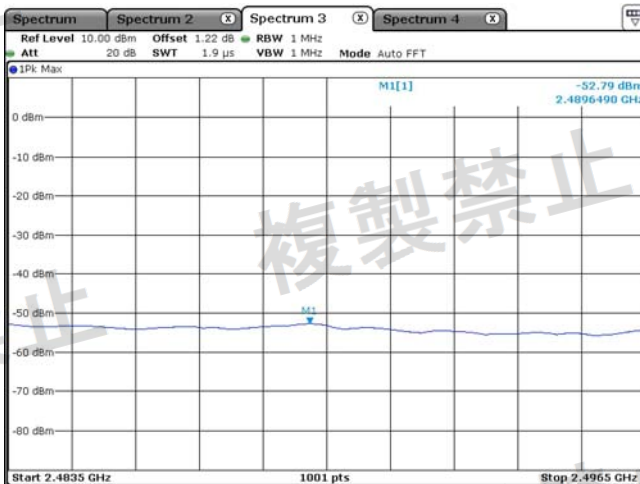
30 ~ 2387 MHz



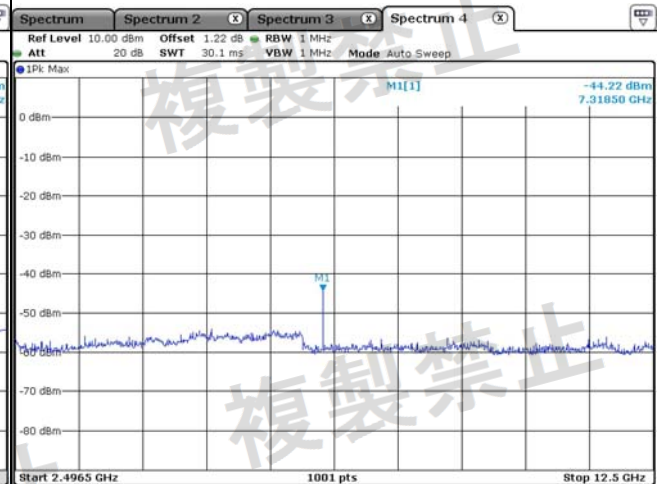
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



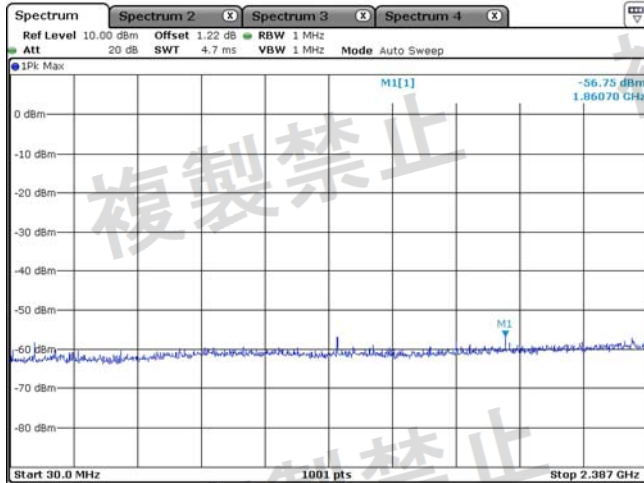
2496.5 ~ 12500 MHz



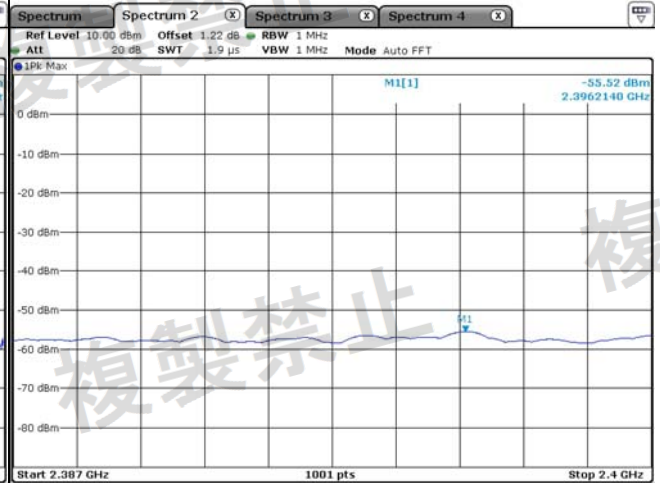
Transmitter spurious emissions

High Channel (2480 MHz)

30 ~ 2387 MHz



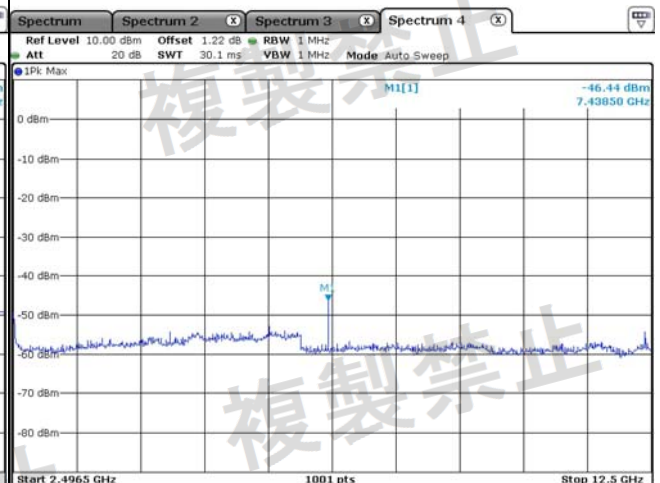
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



8.5. Receiver spurious emissions

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8.5.1 Test Data

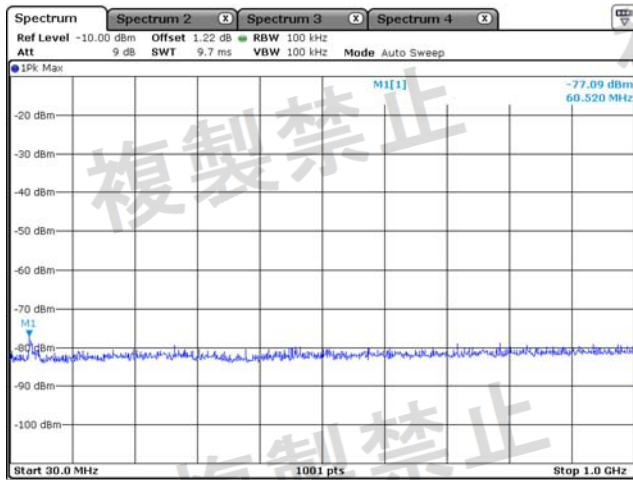
PASS

Test Conditions (Conducted)						
Temperature:		(25 ± 3) °C		TEST RESULTS		
Rel. Humidity:		(52 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Low Frequency: 2402 MHz				(MHz)	(dBm/MHz)	
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	60.52	-76.62	4nW(≡ -53.98dBm) or less	
	V _{NOM}	DC 3.70 V	60.52	-77.09		
	V _{MIN}	DC 3.33 V	60.52	-76.68		
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6991.00	-63.75	20nW(≡ -46.99dBm) or less	
	V _{NOM}	DC 3.70 V	6911.00	-64.46		
	V _{MIN}	DC 3.33 V	6440.00	-63.92		
Middle Frequency: 2440 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	59.56	-77.35	4nW(≡ -53.98dBm) or less	
	V _{NOM}	DC 3.70 V	59.56	-76.98		
	V _{MIN}	DC 3.33 V	59.56	-75.67		
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6543.00	-64.14	20nW(≡ -46.99dBm) or less	
	V _{NOM}	DC 3.70 V	6532.00	-64.06		
	V _{MIN}	DC 3.33 V	6945.00	-63.78		
High Frequency: 2480 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	63.43	-77.90	4nW(≡ -53.98dBm) or less	
	V _{NOM}	DC 3.70 V	60.52	-77.62		
	V _{MIN}	DC 3.33 V	60.52	-78.08		
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6968.00	-64.30	20nW(≡ -46.99dBm) or less	
	V _{NOM}	DC 3.70 V	6451.00	-64.38		
	V _{MIN}	DC 3.33 V	6991.00	-63.97		

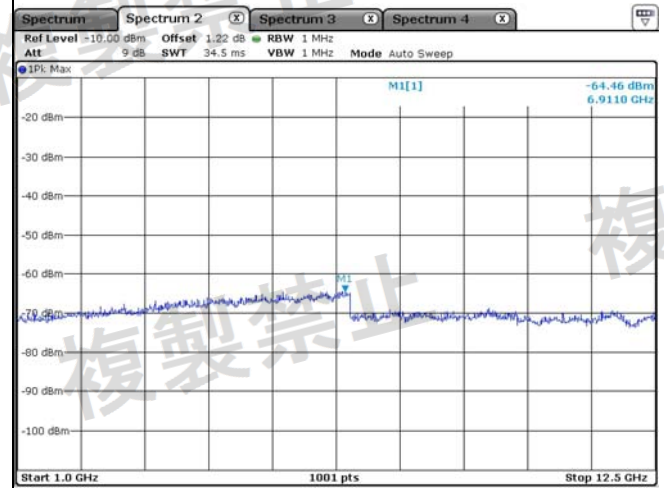
8.5.2 Test Plot (Normal Voltage)

Receiver spurious emissions

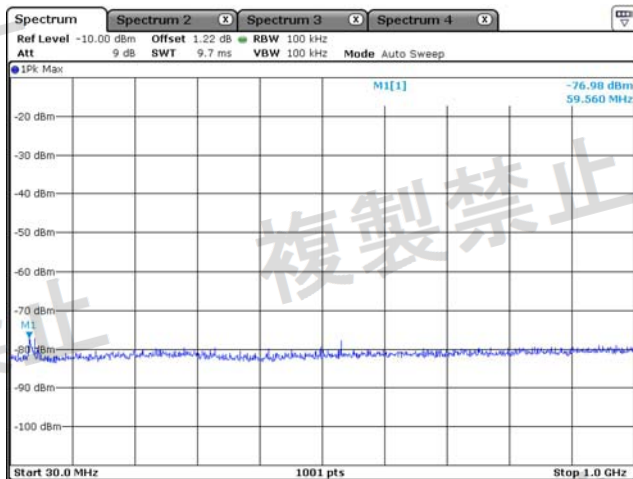
Low Channel (2402 MHz), 30 ~ 1000 MHz



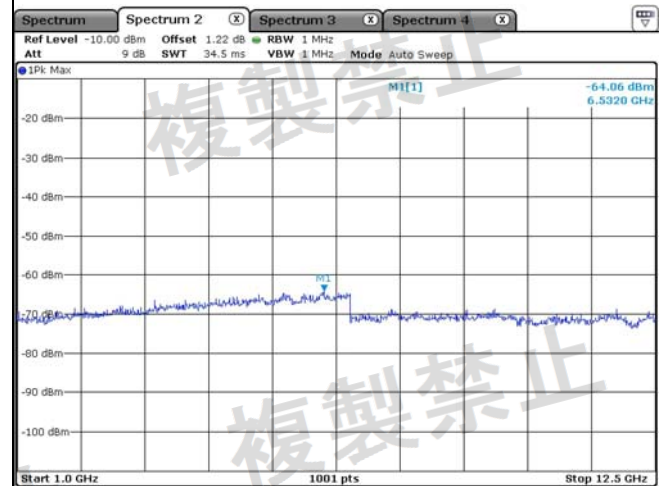
1000 ~ 12500 MHz



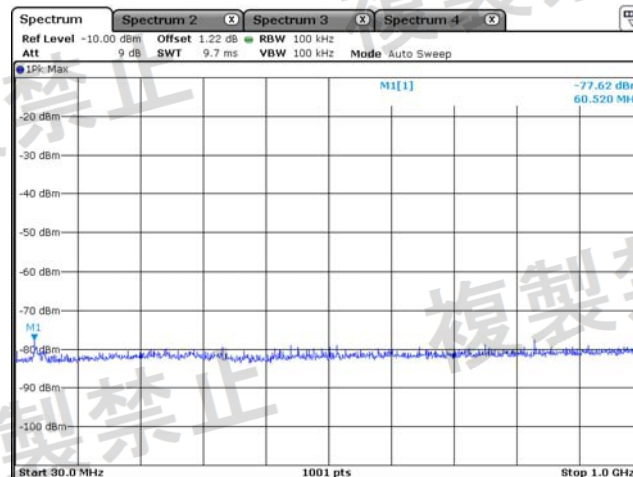
Middle Channel (2440 MHz), 10 ~ 1000 MHz



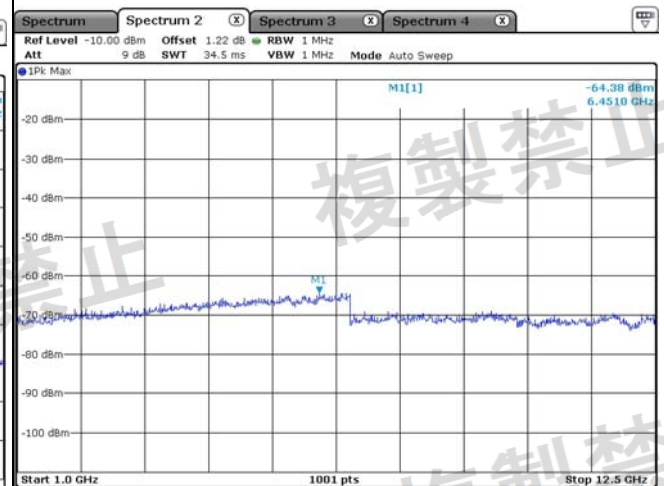
1000 ~ 12500 MHz



High Channel (2480 MHz), 10 ~ 1000 MHz



1000 ~ 12500 MHz



8.6. Anti-Interference

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8.6.1 Test Data

PASS

Test Conditions (Conducted)		TEST RESULTS
Temperature:	(25 ± 3) °C	PASS
Rel. Humidity:	(52 ± 3) % R.H.	

9 Measurement results (LE 2Mbps) (Left Earphone)

9.1. Frequency tolerance

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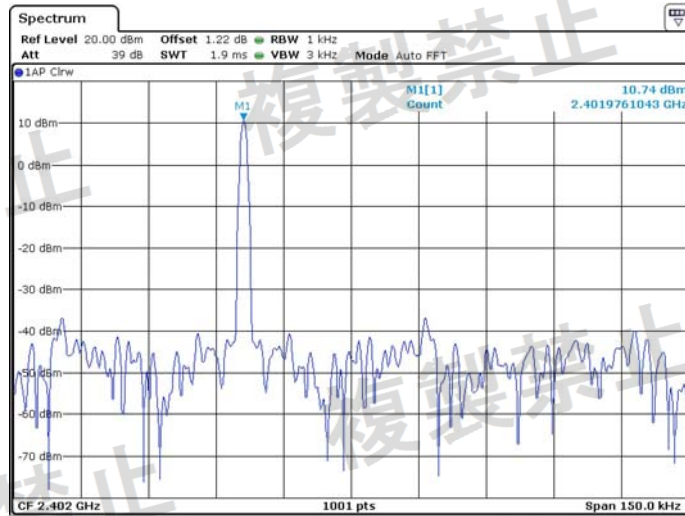
9.1.1 Test Data

PASS

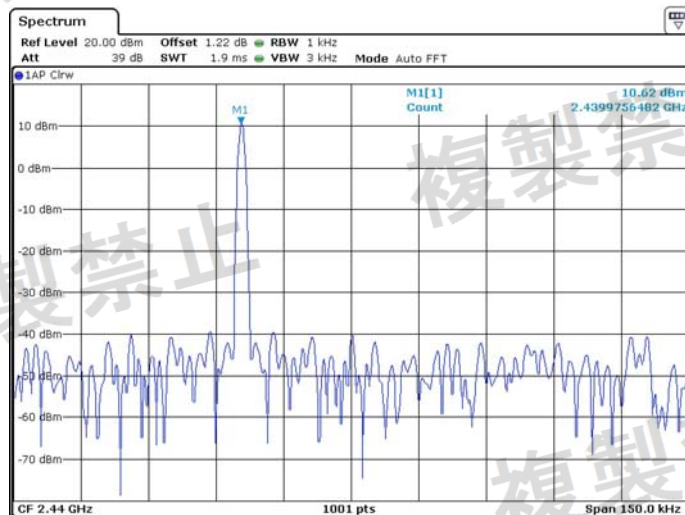
Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low Frequency: 2402 MHz	V _{MAX} DC 4.20 V	2.4019761113	-9.95	± 50
	V _{NOM} DC 3.70 V	2.4019761043	-9.95	
	V _{MIN} DC 3.33 V	2.4019760601	-9.97	
Middle Frequency: 2440 MHz	V _{MAX} DC 4.20 V	2.4399756502	-9.98	
	V _{NOM} DC 3.70 V	2.4399756482	-9.98	
	V _{MIN} DC 3.33 V	2.4399756512	-9.98	
High Frequency: 2480 MHz	V _{MAX} DC 4.20 V	2.4799752830	-9.97	
	V _{NOM} DC 3.70 V	2.4799752816	-9.97	
	V _{MIN} DC 3.33 V	2.4799752839	-9.97	
Measurement uncertainty: ± 2 × 10 ⁻⁷				

9.1.2 Test Plot (Normal Voltage)

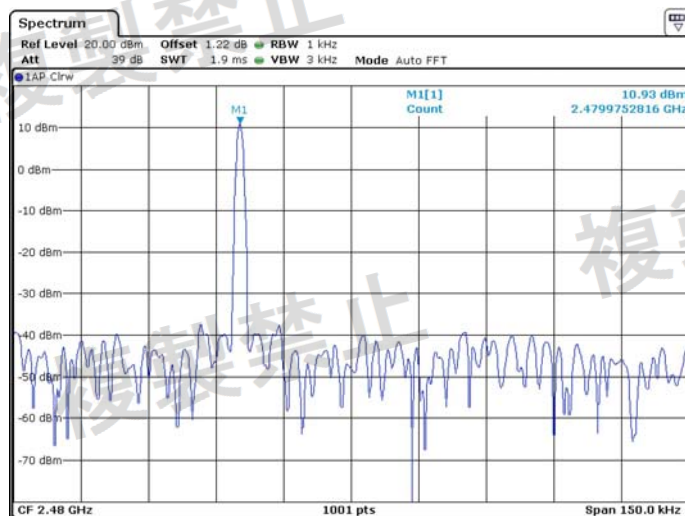
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



9.2. Occupied bandwidth (99%)

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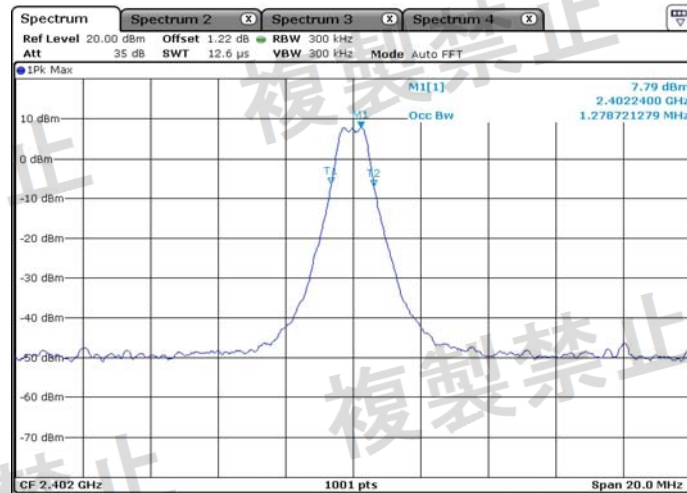
9.2.1 Test Data

PASS

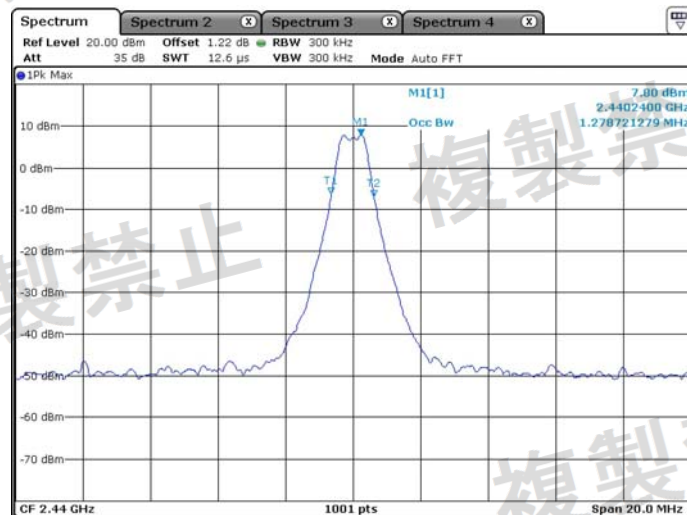
Test Conditions (Conducted)				
Temperature:		(25 ± 3) °C	TEST RESULTS	
Rel. Humidity:		(52 ± 3) % R.H.	Occupied bandwidth (MHz)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	1.28	26MHz or below
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.26	
	V _{MIN}	DC 3.33 V	1.26	
Measurement uncertainty: ± 3 × 10 ⁻⁴				

9.2.2 Test Plot (Normal Voltage)

Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



9.3. Antenna power

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9.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):			F1D: 0.007 W			
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (52 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW) (NOTE1)	Tolerance (%) (NOTE2)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	8.11	6.471	-7.55	(Antenna Power) 10 mW or less (tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.13	6.501	-7.12	
	V _{MIN}	DC 3.33 V	8.11	6.471	-7.55	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	8.18	6.577	-6.05	
	V _{NOM}	DC 3.70 V	8.19	6.592	-5.83	
	V _{MIN}	DC 3.33 V	8.18	6.577	-6.05	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	8.09	6.442	-7.98	
	V _{NOM}	DC 3.70 V	8.09	6.442	-7.98	
	V _{MIN}	DC 3.33 V	8.08	6.427	-8.19	
Measurement uncertainty: ± 1.4 dB						

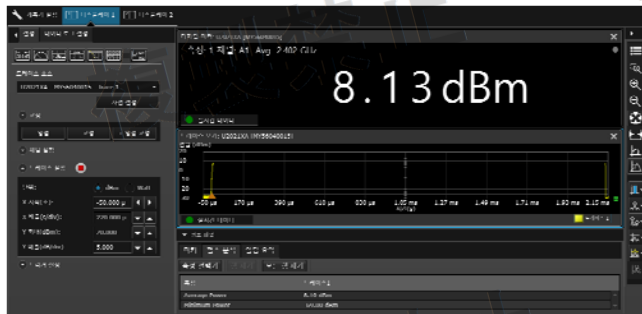
** Measured value (dBm) is the average output power of the transmitter; the power meter reading and corrected for the cable loss. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the peak power meter.

NOTE 1: Tolerance (%) in normal mode = 100 × (Antenna power (mW) - Declared power (mW)) / Declared power (mW)

9.3.2 Test Plot (Normal Voltage)

Measured

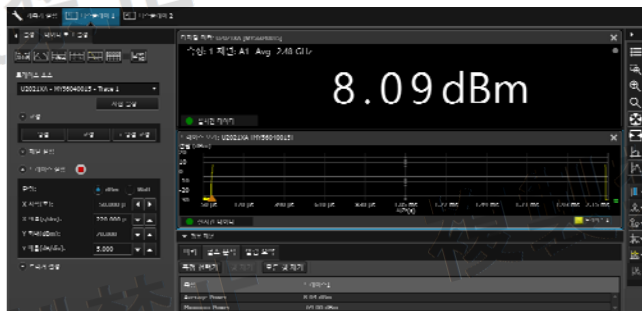
2402 MHz



2440 MHz

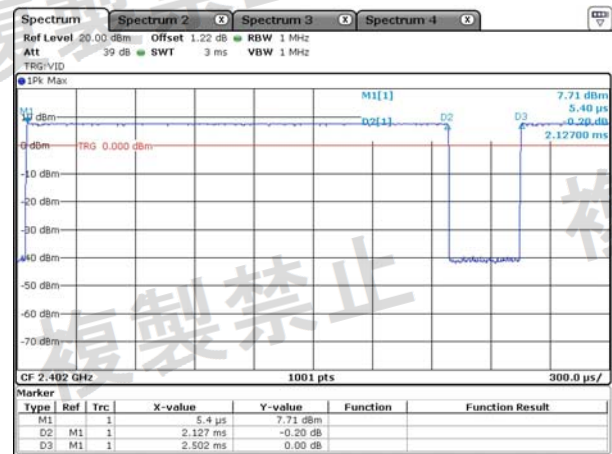


2480 MHz

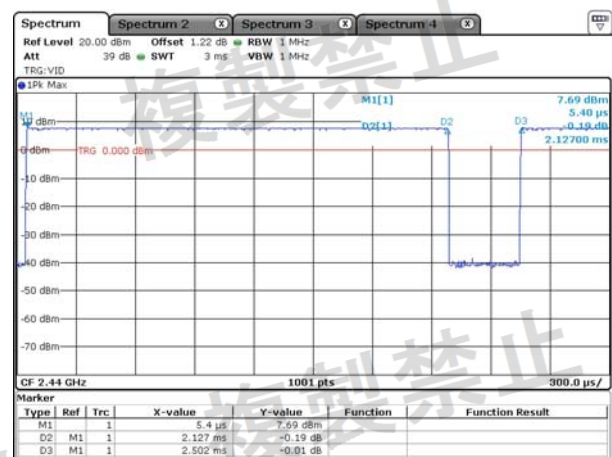


On/ Off Time

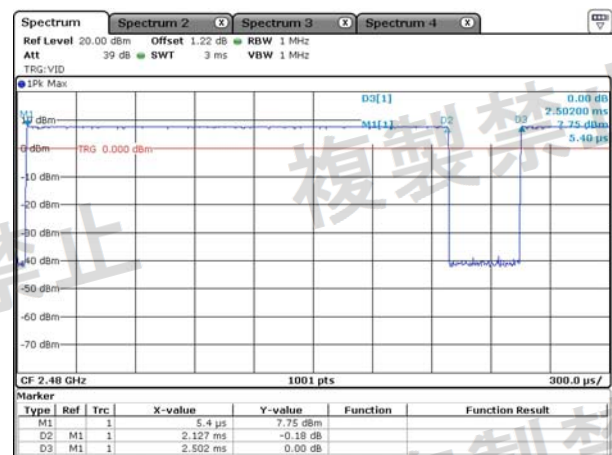
2402 MHz



2440 MHz



2480 MHz



9.4. Transmitter spurious emissions

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9.4.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured	Limit
Low Frequency: 2402 MHz		(MHz)	(dBm/MHz)	
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	120.70	-55.53	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	120.70	-55.97	
	V _{MIN} DC 3.33 V	120.70	-54.76	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-24.94	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-24.88	
	V _{MIN} DC 3.33 V	2399.99	-24.94	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2489.09	-55.23	
	V _{NOM} DC 3.70 V	2484.13	-55.34	
	V _{MIN} DC 3.33 V	2486.13	-55.20	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7208.50	-43.41	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7208.50	-43.48	
	V _{MIN} DC 3.33 V	7208.50	-43.37	
Middle Frequency: 2440 MHz				
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	120.70	-55.69	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	120.70	-55.62	
	V _{MIN} DC 3.33 V	120.70	-55.82	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-53.53	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2396.55	-51.71	
	V _{MIN} DC 3.33 V	2396.28	-52.37	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2483.51	-52.81	
	V _{NOM} DC 3.70 V	2490.33	-52.47	
	V _{MIN} DC 3.33 V	2483.51	-52.06	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7318.50	-44.48	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7318.50	-44.13	
	V _{MIN} DC 3.33 V	7318.50	-44.07	

High Frequency: 2480 MHz

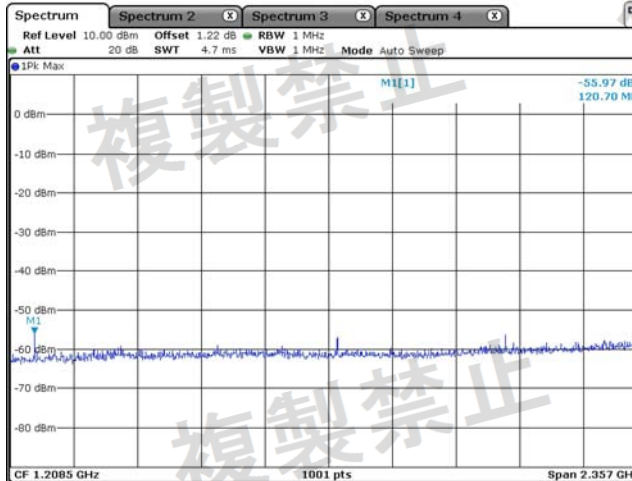
30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	120.70	-55.44	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	120.70	-55.76	
	V _{MIN}	DC 3.33 V	1860.70	-55.87	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2395.42	-56.36	25 μW/MHz(≐ -16dBm) or less
	V _{NOM}	DC 3.70 V	2387.10	-55.89	
	V _{MIN}	DC 3.33 V	2390.07	-56.07	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2483.75	-43.95	
	V _{NOM}	DC 3.70 V	2483.51	-43.76	
	V _{MIN}	DC 3.33 V	2484.43	-43.28	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7438.50	-46.25	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	7438.50	-46.21	
	V _{MIN}	DC 3.33 V	7438.50	-46.52	
Measurement uncertainty: ± 3.0					

9.4.2 Test Plot (Normal Voltage)

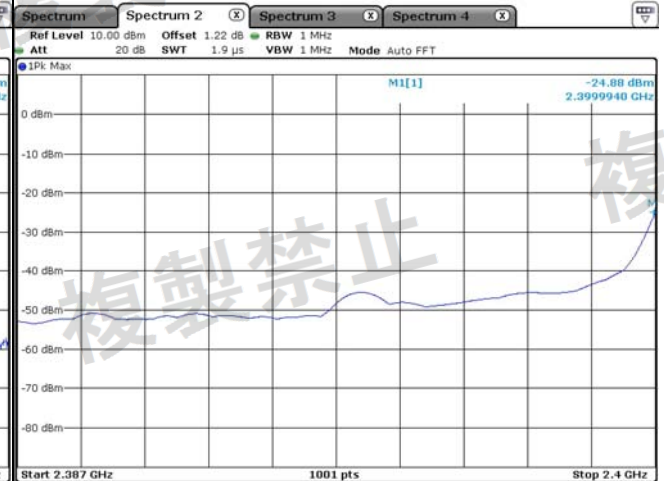
Transmitter spurious emissions

Low Channel (2402 MHz)

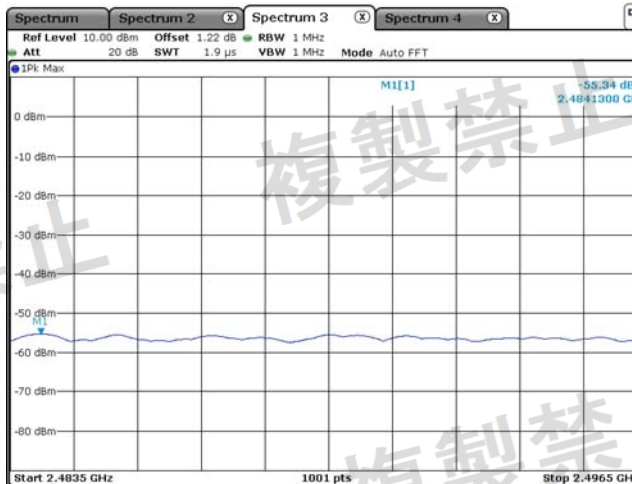
30 ~ 2387 MHz



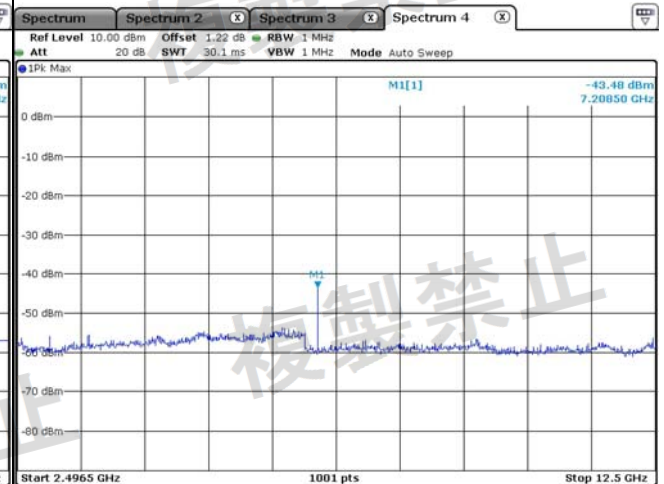
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



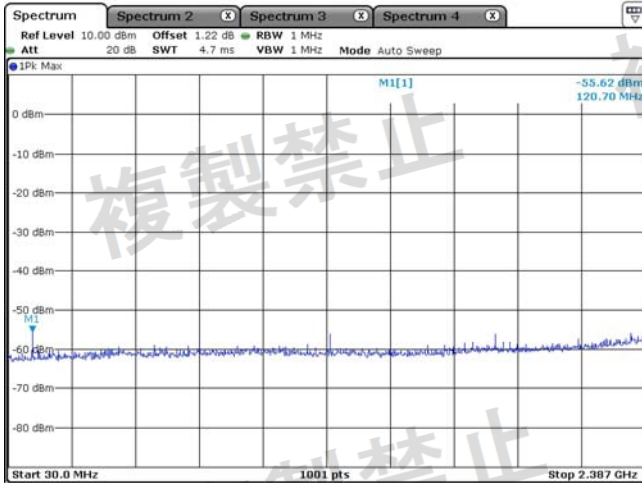
2496.5 ~ 12500 MHz



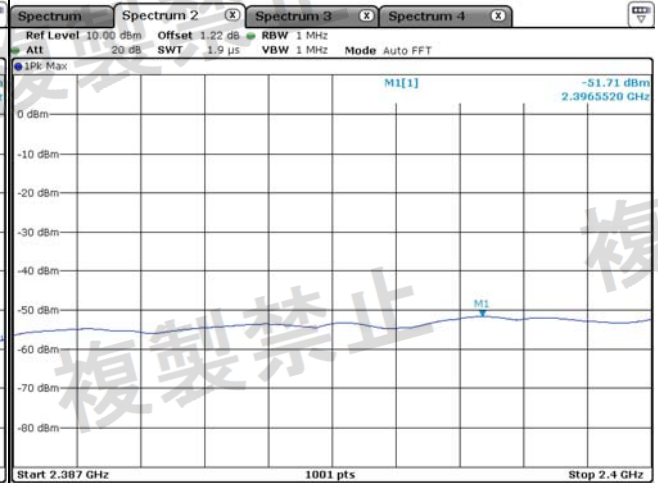
Transmitter spurious emissions

Middle Channel (2440 MHz)

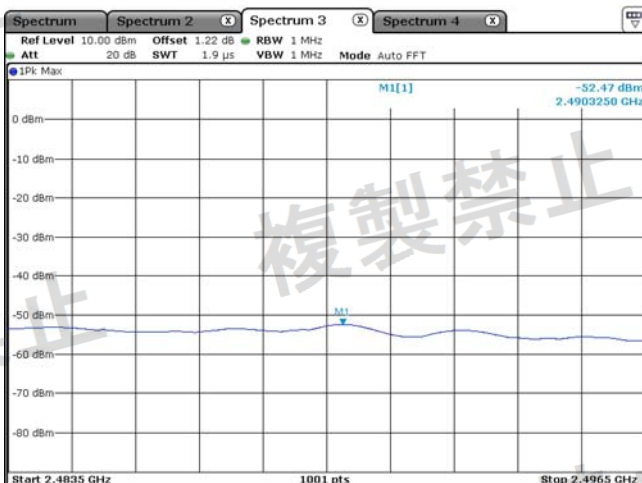
30 ~ 2387 MHz



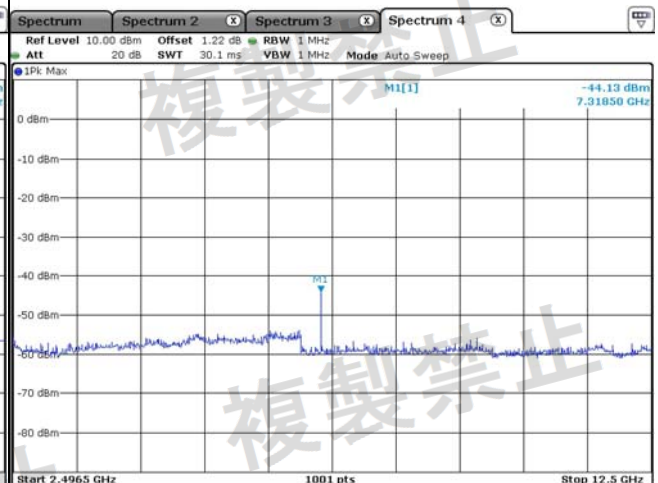
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



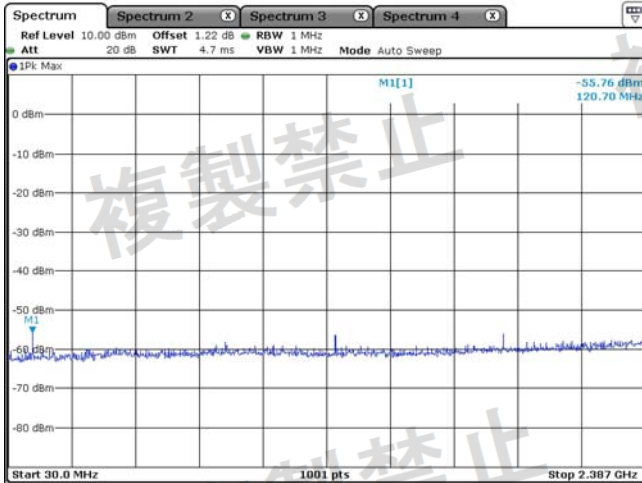
2496.5 ~ 12500 MHz



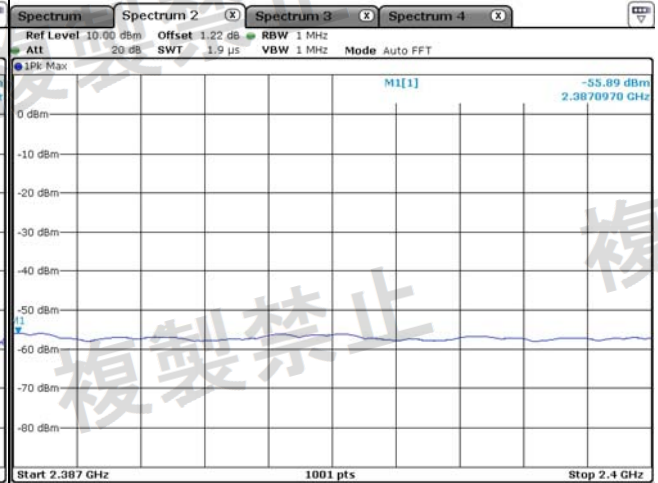
Transmitter spurious emissions

High Channel (2480 MHz)

30 ~ 2387 MHz



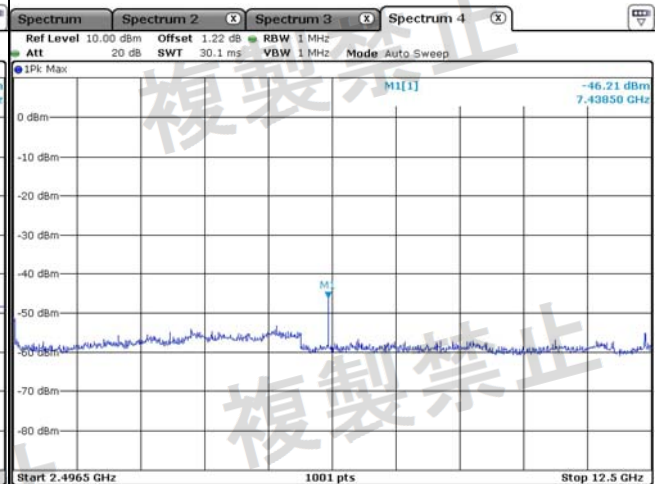
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



9.5. Receiver spurious emissions

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9.5.1 Test Data

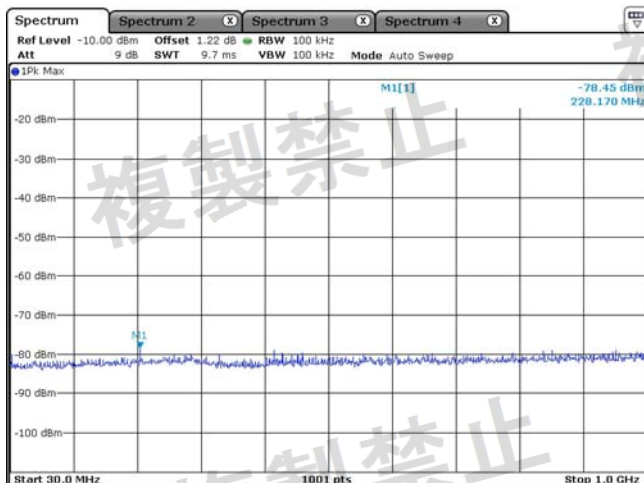
PASS

Test Conditions (Conducted)					
Temperature:		(25 ± 3) °C	TEST RESULTS		
Rel. Humidity:		(52 ± 3) % R.H.	Measured frequency	Measured Value	Limit
Low Frequency: 2402 MHz			(MHz)	(dBm/MHz)	
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	599.31	-79.04	4nW(≡ -53.98dBm) or less
	V _{NOM}	DC 3.70 V	228.17	-78.45	
	V _{MIN}	DC 3.33 V	980.13	-78.84	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6761.00	-64.14	20nW(≡ -46.99dBm) or less
	V _{NOM}	DC 3.70 V	6497.00	-64.10	
	V _{MIN}	DC 3.33 V	5808.00	-64.27	
Middle Frequency: 2440 MHz					
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	431.66	-79.27	4nW(≡ -53.98dBm) or less
	V _{NOM}	DC 3.70 V	836.72	-79.13	
	V _{MIN}	DC 3.33 V	964.63	-78.81	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6842.00	-63.60	20nW(≡ -46.99dBm) or less
	V _{NOM}	DC 3.70 V	6991.00	-63.62	
	V _{MIN}	DC 3.33 V	6980.00	-64.15	
High Frequency: 2480 MHz					
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	909.40	-79.06	4nW(≡ -53.98dBm) or less
	V _{NOM}	DC 3.70 V	872.57	-78.73	
	V _{MIN}	DC 3.33 V	995.64	-78.00	
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6589.00	-63.97	20nW(≡ -46.99dBm) or less
	V _{NOM}	DC 3.70 V	6440.00	-64.17	
	V _{MIN}	DC 3.33 V	6899.00	-64.34	

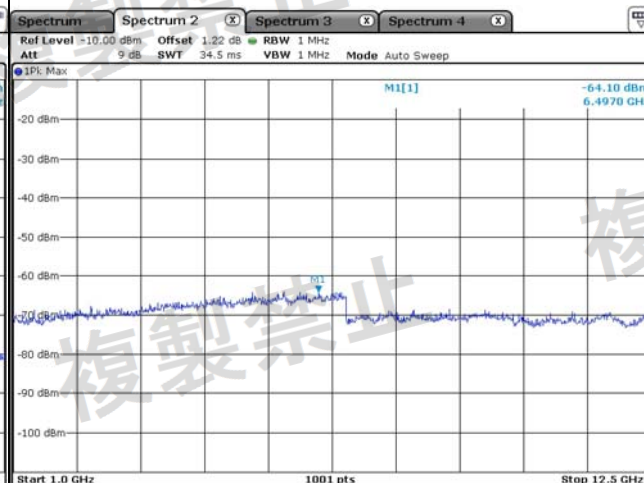
9.5.2 Test Plot (Normal Voltage)

Receiver spurious emissions

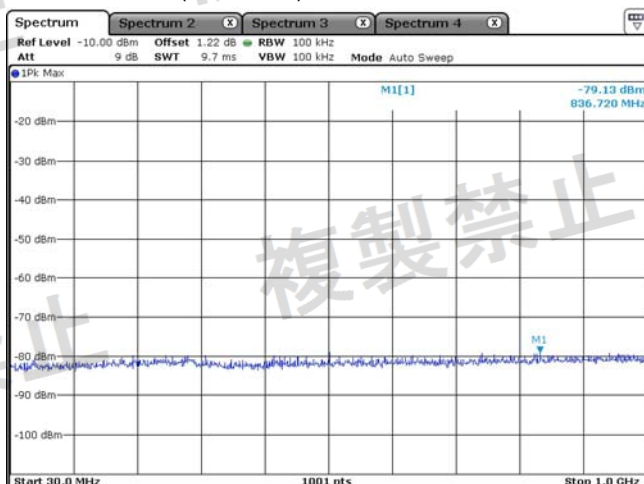
Low Channel (2402 MHz), 30 ~ 1000 MHz



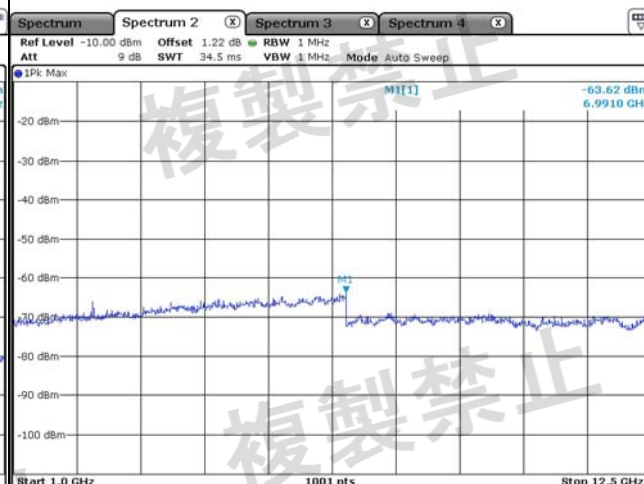
1000 ~ 12500 MHz



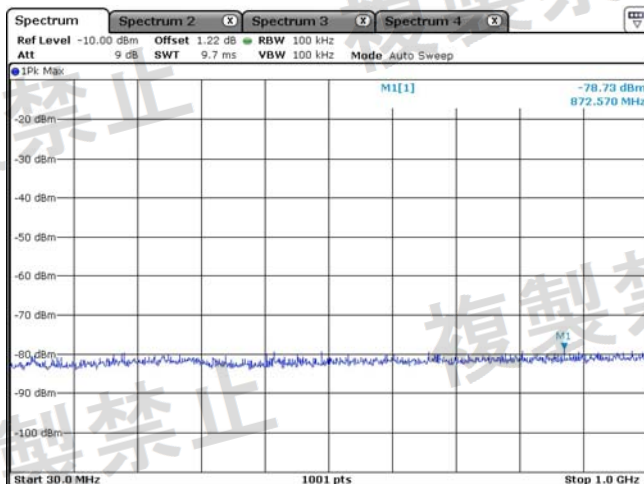
Middle Channel (2440 MHz), 10 ~ 1000 MHz



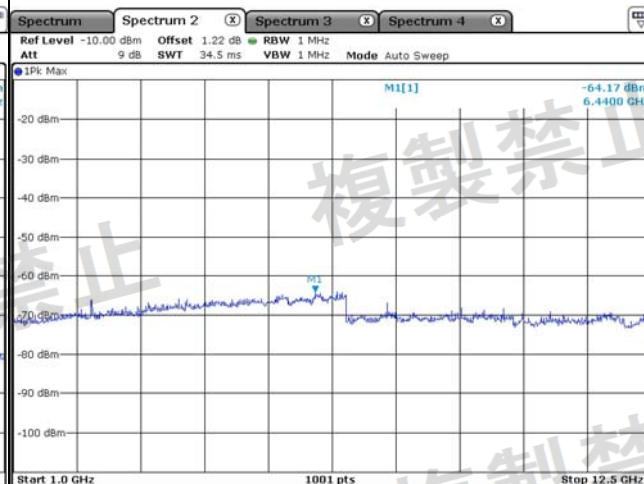
1000 ~ 12500 MHz



High Channel (2480 MHz), 10 ~ 1000 MHz



1000 ~ 12500 MHz



9.6. Anti-Interference

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9.6.1 Test Data

PASS

Test Conditions (Conducted)		TEST RESULTS
Temperature:	(25 ± 3) °C	PASS
Rel. Humidity:	(52 ± 3) % R.H.	

10 Measurement results (LE 2Mbps) (Right Earphone)

10.1. Frequency tolerance

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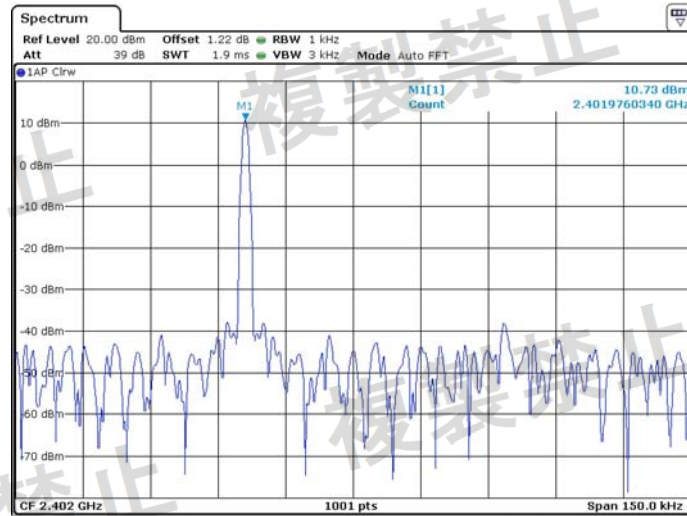
10.1.1 Test Data

PASS

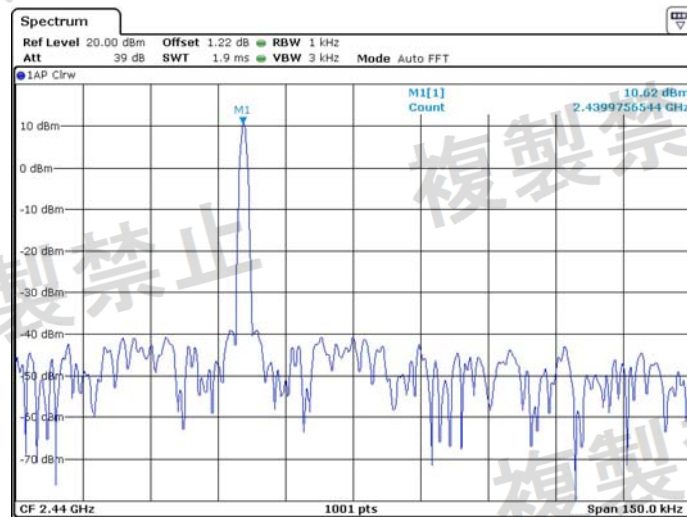
Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured (GHz)	Tolerance (ppm)	Limit (ppm)
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	2.4019760395	-9.98
	V _{NOM}	DC 3.70 V	2.4019760340	-9.98
	V _{MIN}	DC 3.33 V	2.4019760246	-9.98
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	2.4399756509	-9.98
	V _{NOM}	DC 3.70 V	2.4399756544	-9.98
	V _{MIN}	DC 3.33 V	2.4399756538	-9.98
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	2.4799752856	-9.97
	V _{NOM}	DC 3.70 V	2.4799752906	-9.96
	V _{MIN}	DC 3.33 V	2.4799752918	-9.96
Measurement uncertainty: $\pm 2 \times 10^{-7}$				

10.1.2 Test Plot (Normal Voltage)

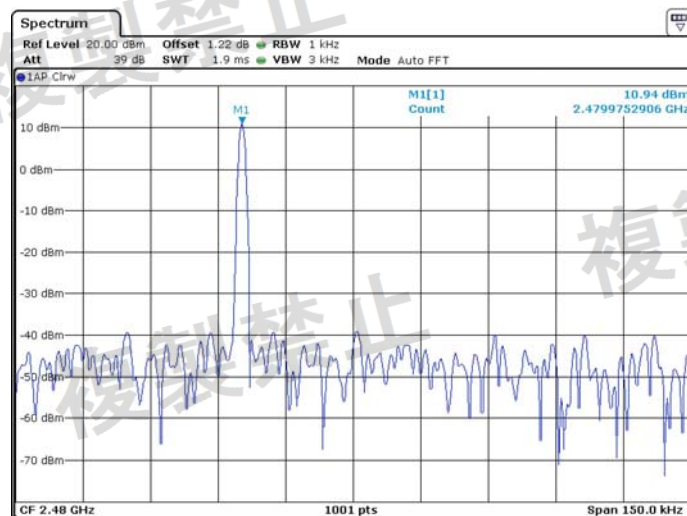
Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



10.2. Occupied bandwidth (99%)

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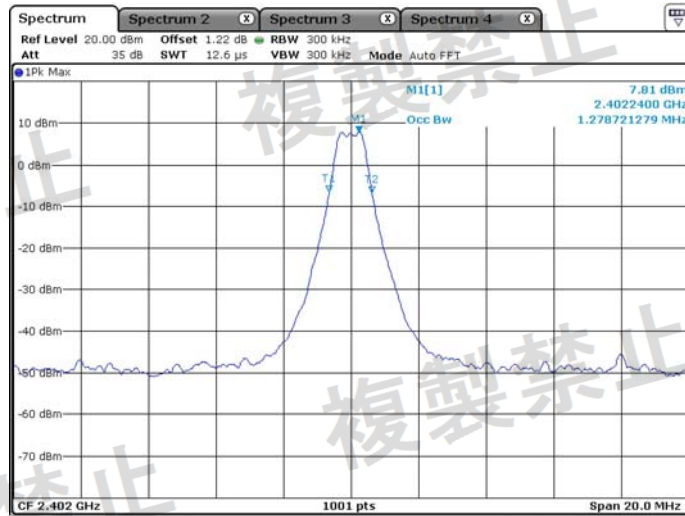
10.2.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature:		(25 ± 3) °C	TEST RESULTS	
Rel. Humidity:		(52 ± 3) % R.H.	Occupied bandwidth (MHz)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	1.28	26MHz or below
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	1.28	
	V _{NOM}	DC 3.70 V	1.28	
	V _{MIN}	DC 3.33 V	1.28	
Measurement uncertainty: ± 3 × 10 ⁻⁴				

10.2.2 Test Plot (Normal Voltage)

Low Channel
(2402 MHz)



Middle Channel
(2440 MHz)



High Channel
(2480 MHz)



10.3. Antenna power

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10.3.1 Test Data

PASS

Test Conditions (Conducted)						
RF output power (declared):			F1D: 0.007 W			
Temperature: (25 ± 3) °C			TEST RESULTS			
Rel. Humidity: (52 ± 3) % R.H.			Measured (dBm)	Antenna Power (mW) (NOTE1)	Tolerance (%) (NOTE2)	Limit
Low Frequency: 2402 MHz	V _{MAX}	DC 4.20 V	8.11	6.471	-7.55	(Antenna Power) 10 mW or less (tolerance) +20 % and -80 %
	V _{NOM}	DC 3.70 V	8.12	6.486	-7.34	
	V _{MIN}	DC 3.33 V	8.12	6.486	-7.34	
Middle Frequency: 2440 MHz	V _{MAX}	DC 4.20 V	8.18	6.577	-6.05	
	V _{NOM}	DC 3.70 V	8.18	6.577	-6.05	
	V _{MIN}	DC 3.33 V	8.17	6.561	-6.26	
High Frequency: 2480 MHz	V _{MAX}	DC 4.20 V	8.08	6.427	-8.19	
	V _{NOM}	DC 3.70 V	8.08	6.427	-8.19	
	V _{MIN}	DC 3.33 V	8.08	6.427	-8.19	
Measurement uncertainty: ± 1.4 dB						

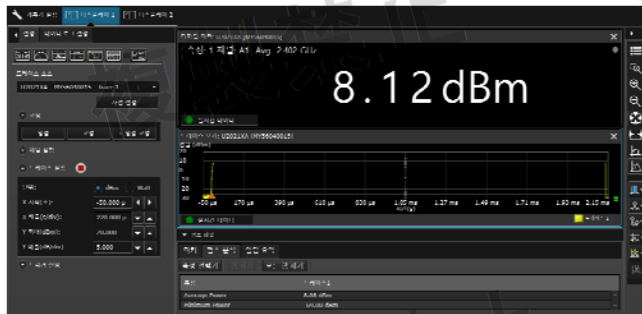
** Measured value (dBm) is the average output power of the transmitter; the power meter reading and corrected for the cable loss. The measured power was only performed about the burst-on time excluding burst-off time using the trigger function of the peak power meter.

NOTE 1: Tolerance (%) in normal mode = 100 × (Antenna power (mW) - Declared power (mW)) / Declared power (mW)

10.3.2 Test Plot (Normal Voltage)

Measured

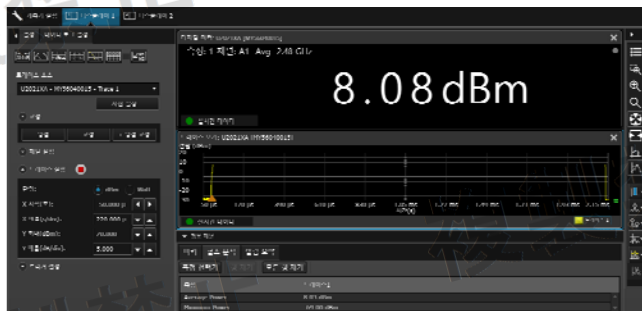
2402 MHz



2440 MHz

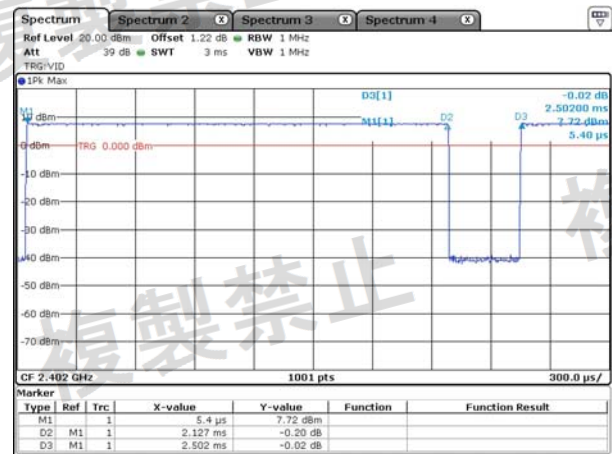


2480 MHz

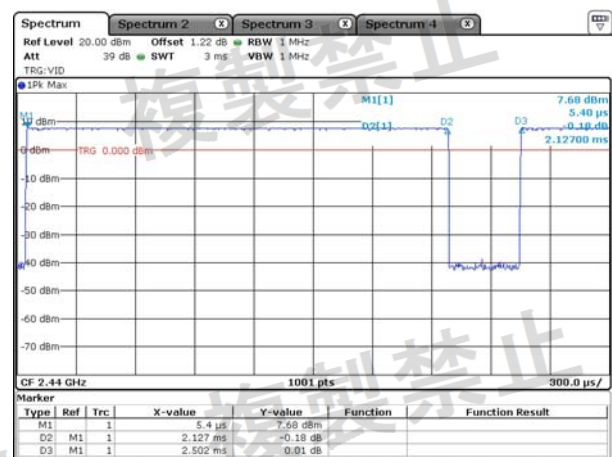


On/ Off Time

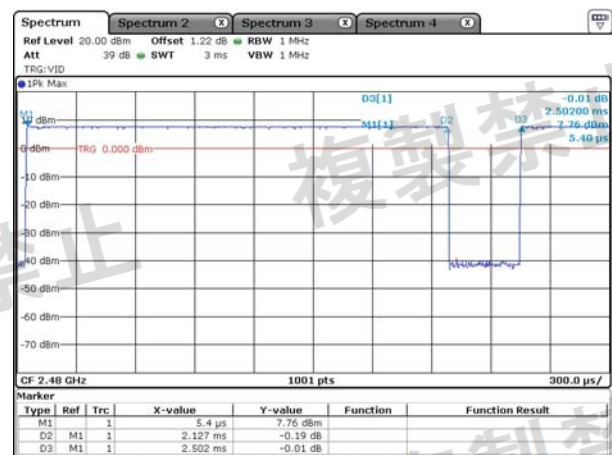
2402 MHz



2440 MHz



2480 MHz



10.4. Transmitter spurious emissions

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10.4.1 Test Data

PASS

Test Conditions (Conducted)				
Temperature: (25 ± 3) °C		TEST RESULTS		
Rel. Humidity: (52 ± 3) % R.H.		Measured frequency	Measured	Limit
Low Frequency: 2402 MHz		(MHz)	(dBm/MHz)	
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	120.70	-55.44	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	120.70	-55.92	
	V _{MIN} DC 3.33 V	120.70	-55.82	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2399.99	-24.61	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2399.99	-24.93	
	V _{MIN} DC 3.33 V	2399.99	-24.80	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2494.07	-55.73	
	V _{NOM} DC 3.70 V	2493.00	-55.73	
	V _{MIN} DC 3.33 V	2483.60	-55.71	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7208.50	-43.45	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7208.50	-43.04	
	V _{MIN} DC 3.33 V	7208.50	-43.52	
Middle Frequency: 2440 MHz				
30 MHz ~ 2387 MHz	V _{MAX} DC 4.20 V	120.70	-55.78	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	120.70	-55.52	
	V _{MIN} DC 3.33 V	120.70	-55.50	
2387 MHz ~ 2400 MHz	V _{MAX} DC 4.20 V	2396.28	-52.48	25 μW/MHz(≒ -16dBm) or less
	V _{NOM} DC 3.70 V	2398.83	-52.97	
	V _{MIN} DC 3.33 V	2399.99	-52.77	
2483.5 ~ 2496.5 MHz	V _{MAX} DC 4.20 V	2484.39	-52.59	
	V _{NOM} DC 3.70 V	2485.57	-51.45	
	V _{MIN} DC 3.33 V	2483.51	-52.54	
2496.5 ~ 12500 MHz	V _{MAX} DC 4.20 V	7318.50	-43.93	2.5μW/MHz(≒ -26dBm) or less
	V _{NOM} DC 3.70 V	7318.50	-43.78	
	V _{MIN} DC 3.33 V	7318.50	-44.16	

High Frequency: 2480 MHz

30 MHz ~ 2387 MHz	V _{MAX}	DC 4.20 V	120.70	-55.91	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	120.70	-55.18	
	V _{MIN}	DC 3.33 V	120.70	-55.33	
2387 MHz ~ 2400 MHz	V _{MAX}	DC 4.20 V	2392.51	-56.36	25 μW/MHz(≐ -16dBm) or less
	V _{NOM}	DC 3.70 V	2392.77	-55.63	
	V _{MIN}	DC 3.33 V	2392.18	-55.99	
2483.5 ~ 2496.5 MHz	V _{MAX}	DC 4.20 V	2484.39	-44.00	
	V _{NOM}	DC 3.70 V	2483.66	-44.46	
	V _{MIN}	DC 3.33 V	2483.51	-43.95	
2496.5 ~ 12500 MHz	V _{MAX}	DC 4.20 V	7438.50	-46.31	2.5μW/MHz(≐ -26dBm) or less
	V _{NOM}	DC 3.70 V	7438.50	-46.22	
	V _{MIN}	DC 3.33 V	7438.50	-46.39	
Measurement uncertainty: ± 3.0					

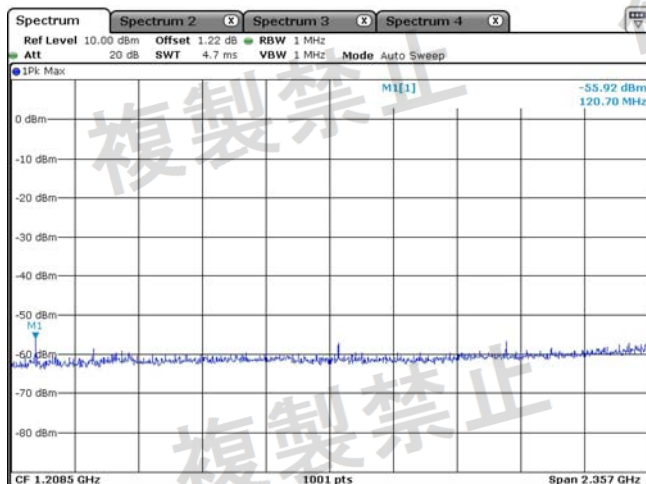
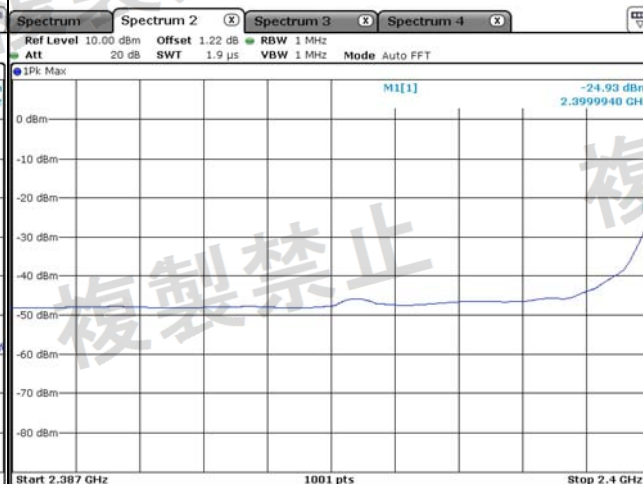
10.4.2 Test Plot (Normal Voltage)

Transmitter spurious emissions

Low Channel (2402 MHz)

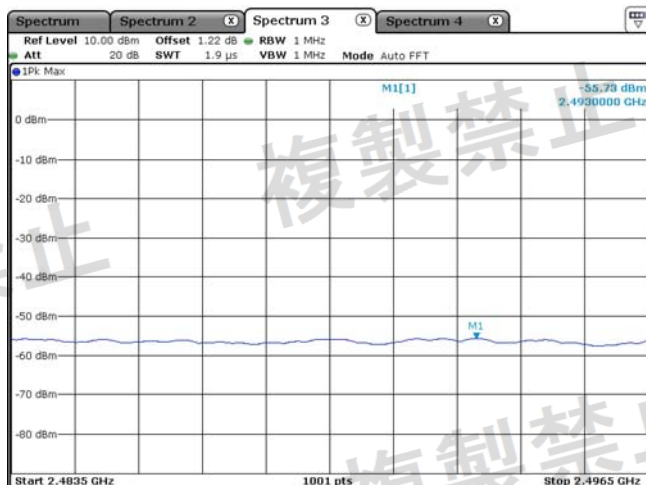
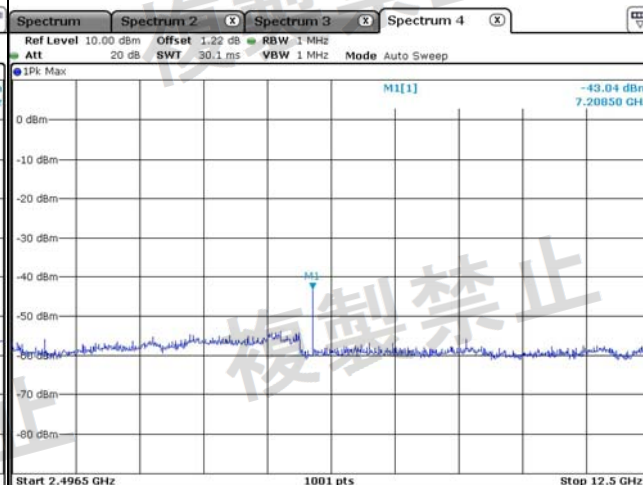
30 ~ 2387 MHz

2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz

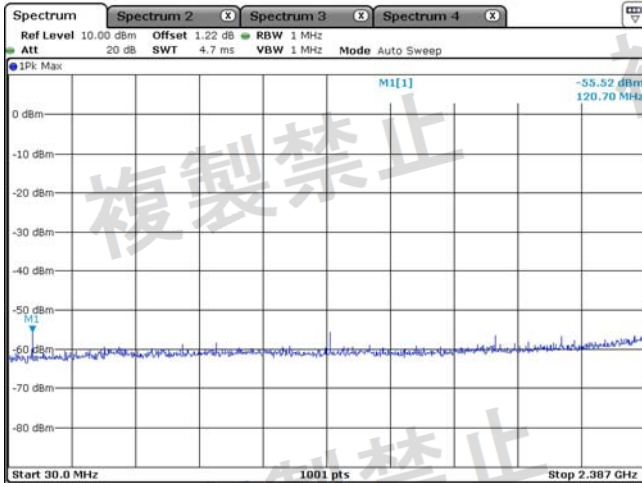
2496.5 ~ 12500 MHz



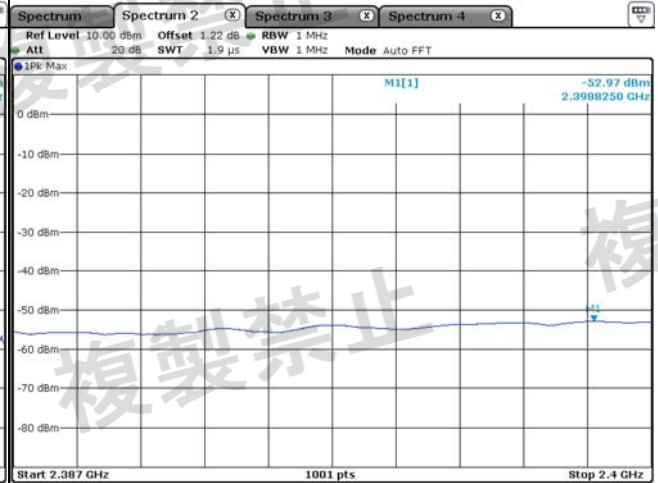
Transmitter spurious emissions

Middle Channel (2440 MHz)

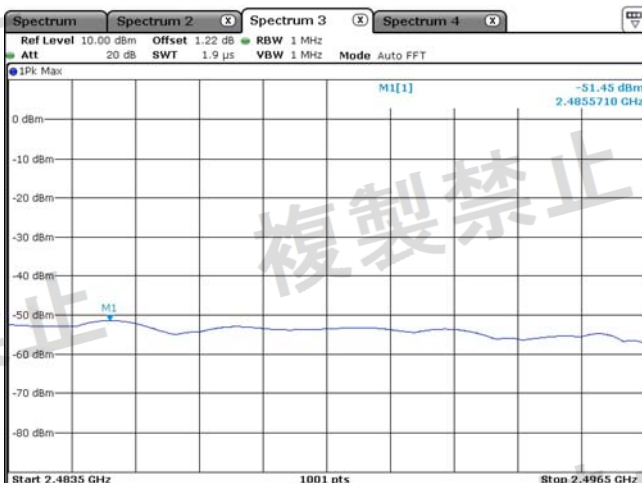
30 ~ 2387 MHz



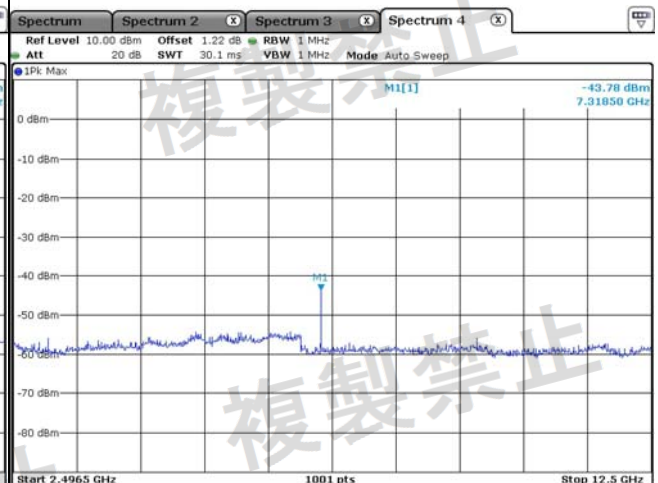
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



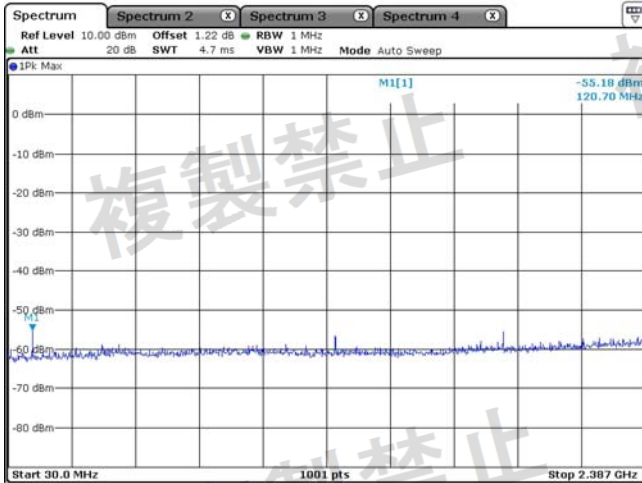
2496.5 ~ 12500 MHz



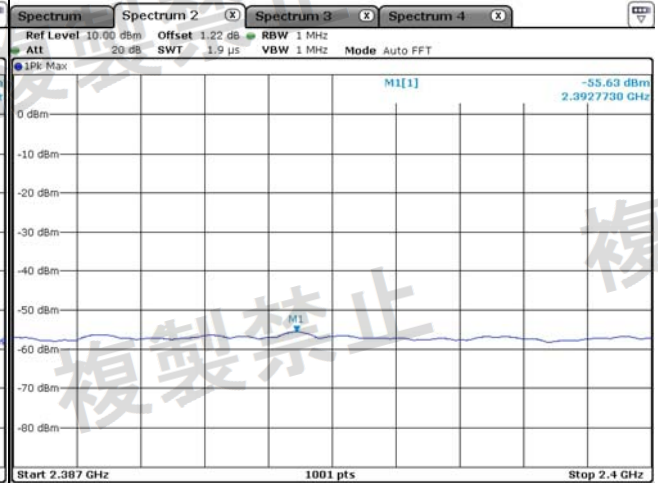
Transmitter spurious emissions

High Channel (2480 MHz)

30 ~ 2387 MHz



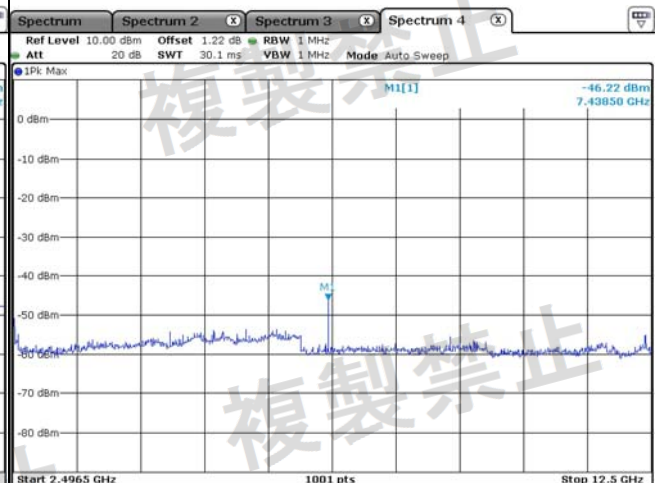
2387 ~ 2400 MHz



2483.5 ~ 2496.5 MHz



2496.5 ~ 12500 MHz



10.5. Receiver spurious emissions

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10.5.1 Test Data

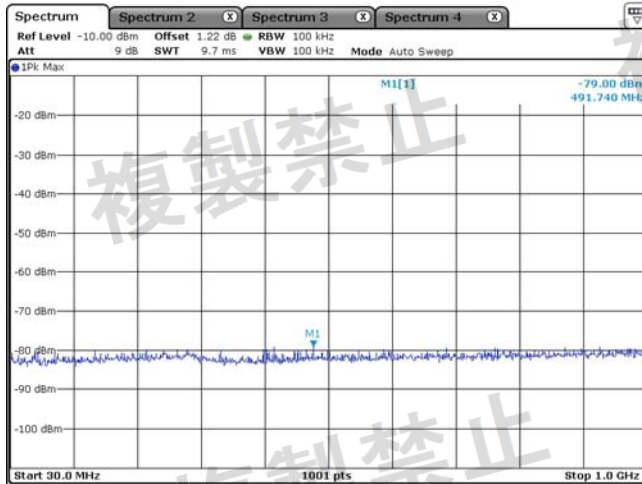
PASS

Test Conditions (Conducted)						
Temperature:		(25 ± 3) °C		TEST RESULTS		
Rel. Humidity:		(52 ± 3) % R.H.		Measured frequency	Measured Value	Limit
Low Frequency: 2402 MHz				(MHz)	(dBm/MHz)	
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	828.00	-78.56	4nW(≡ -53.98dBm) or less	
	V _{NOM}	DC 3.70 V	491.74	-79.00		
	V _{MIN}	DC 3.33 V	431.66	-79.14		
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6980.00	-63.73	20nW(≡ -46.99dBm) or less	
	V _{NOM}	DC 3.70 V	6991.00	-63.94		
	V _{MIN}	DC 3.33 V	6566.00	-63.59		
Middle Frequency: 2440 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	835.75	-78.53	4nW(≡ -53.98dBm) or less	
	V _{NOM}	DC 3.70 V	910.36	-78.35		
	V _{MIN}	DC 3.33 V	997.58	-78.67		
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6486.00	-63.79	20nW(≡ -46.99dBm) or less	
	V _{NOM}	DC 3.70 V	6681.00	-64.01		
	V _{MIN}	DC 3.33 V	6922.00	-63.99		
High Frequency: 2480 MHz						
30 MHz ~ 1000 MHz	V _{MAX}	DC 4.20 V	939.44	-78.74	4nW(≡ -53.98dBm) or less	
	V _{NOM}	DC 3.70 V	931.68	-78.03		
	V _{MIN}	DC 3.33 V	954.94	-78.46		
1000 MHz ~ 12500 MHz	V _{MAX}	DC 4.20 V	6612.00	-63.92	20nW(≡ -46.99dBm) or less	
	V _{NOM}	DC 3.70 V	6784.00	-63.54		
	V _{MIN}	DC 3.33 V	6865.00	-64.09		

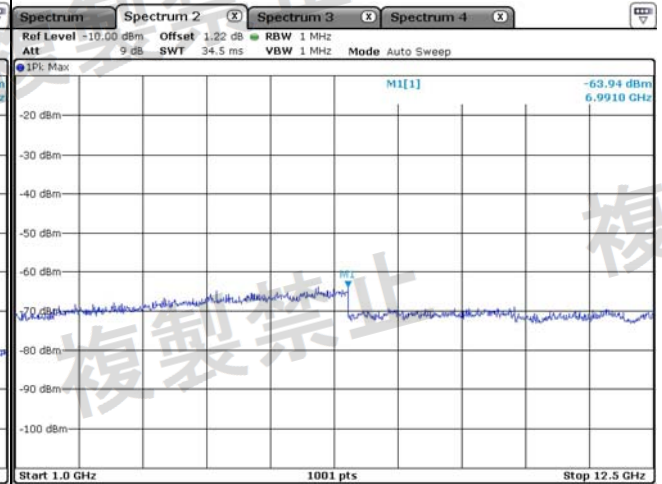
10.5.2 Test Plot (Normal Voltage)

Receiver spurious emissions

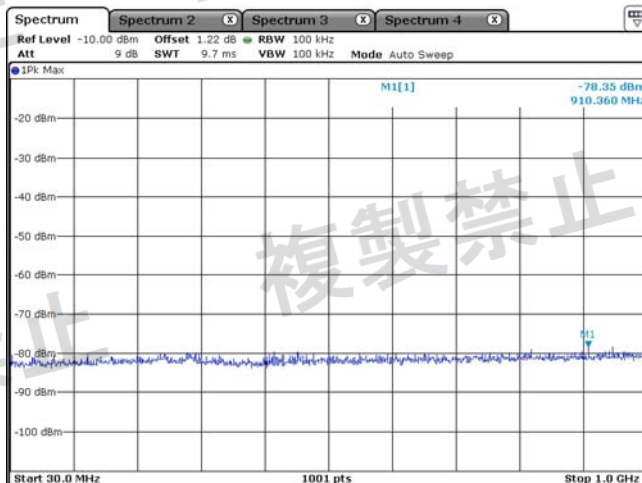
Low Channel (2402 MHz), 30 ~ 1000 MHz



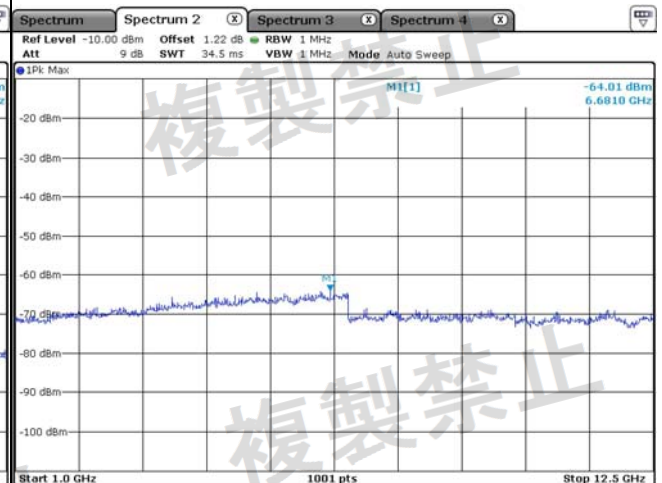
1000 ~ 12500 MHz



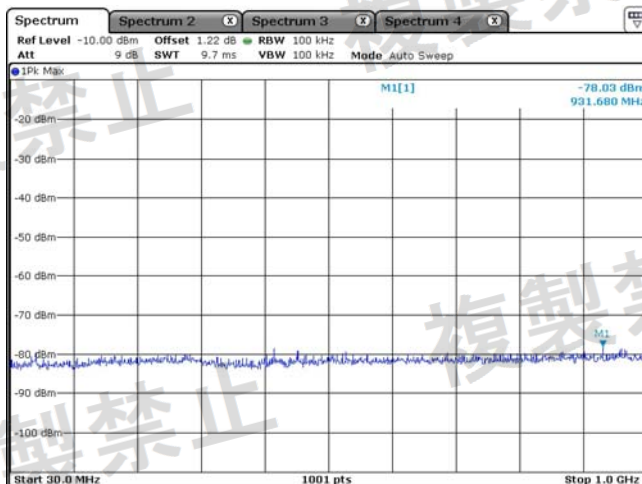
Middle Channel (2440 MHz), 10 ~ 1000 MHz



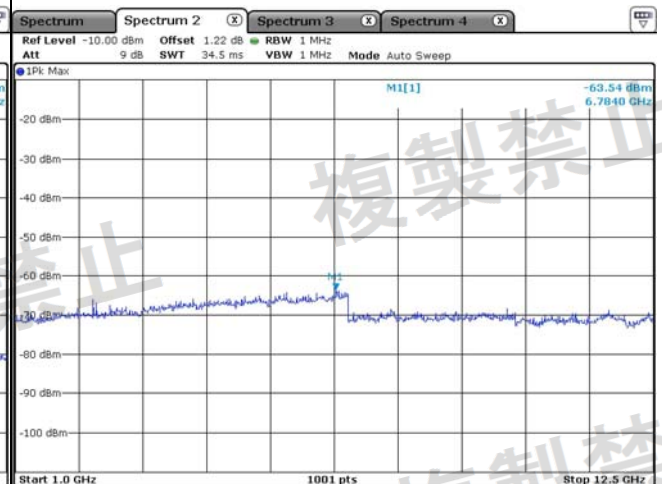
1000 ~ 12500 MHz



High Channel (2480 MHz), 10 ~ 1000 MHz



1000 ~ 12500 MHz



10.6. Anti-Interference

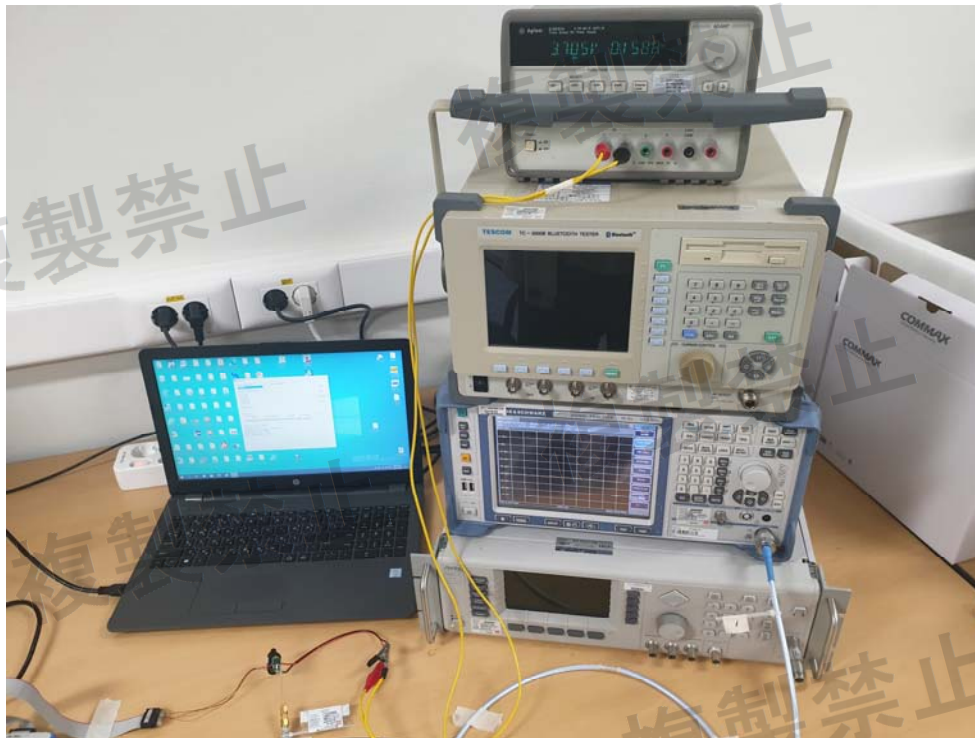
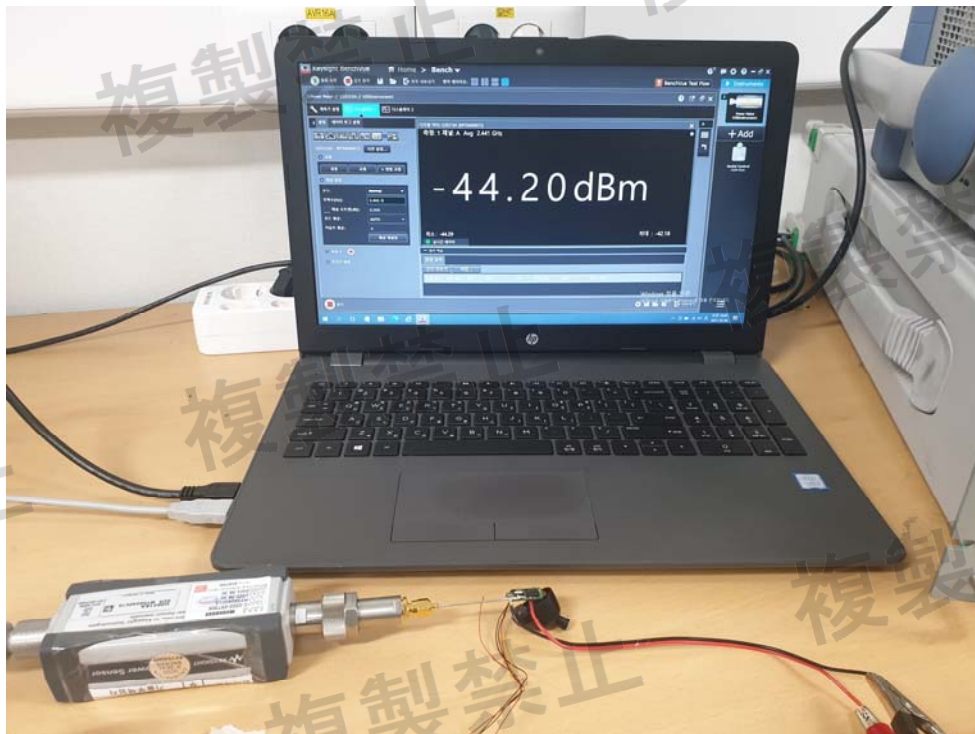
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10.6.1 Test Data

PASS

Test Conditions (Conducted)		TEST RESULTS
Temperature:	(25 ± 3) °C	PASS
Rel. Humidity:	(52 ± 3) % R.H.	

11 Photographs of the test setup



12 Photographs of EUT

