



TEST REPORT



Report No. : KES-RF250791-R1

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KES Co., Ltd.

#3002, #3503, #3701, 40, Simin-daero365beon-gil,
Dongan-gu, Anyang-si, Gyeonggi-do, 14057,
Republic of Korea
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■ J-MIC TEST REPORT

1. Client

- Name : neumafit Inc.
- Address : 32-1-306, 1, Gwanak-ro, Gwanak-gu, Seoul, South Korea

2. Sample Description

- Product item : Neumafit Gen2
- Model name : NG2-F25
- Manufacturer etc. : ESOL CO., LTD.

3. Date of test : 2025.12.18, 2026.02.19

4. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

- Address : #3002, #3503, #3701, 40, Simin-daero365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Republic of Korea

5. Test method used : The Radio Law, Annex 43

6. Test result : PASS

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

This laboratory is not accredited for the test results marked *.

This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager
	Name : Ki-chang Kim (Signature)	Name : Young-Jin Lee (Signature)

2026. 02. 27.

KES Co., Ltd.

Accredited by KOLAS, Republic of KOREA

**REPORT REVISION HISTORY**

Date	Test Report No.	Revision History
2026.02.12	KES-RF250791	Initial
2026.02.25	KES-RF250791-R1	Manufacturer name change and Output Power retest

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Use of uncertainty of measurement for decisions on conformity (decision rule):

■ No decision rule is specified by the standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other (to be specified, for example when required by the standard or client)



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Report No. : KES-RF250791-R1

1. General information

Applicant: neumafit Inc.
Applicant address: 32-1-306, 1, Gwanak-ro, Gwanak-gu, Seoul, South Korea
Manufacturer: ESOL CO., LTD.
Manufacturer address: 3F Building B, 6 Seounsandan-ro 4-gil, Gyeyang-gu, Incheon, Korea
Test site: KES Co., Ltd.
Test site address: ☒ #3002, #3503, #3701, 40, Simin-daero365beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, 14057, Republic of Korea
☐ 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, Korea
Standard Article 2, Paragraph of Item 19
Test device serial No.: ☒ Production ☐ Pre-production ☐ Engineering

1.1. EUT description

Equipment under test Neumafit Gen2
Frequency range 2 402 MHz ~ 2 480 MHz (LE 1 Mbps, LE 2 Mbps)
Model NG2-F25
Modulation technique GFSK
Number of channels 2 402 MHz ~ 2 480 MHz (LE 1 Mbps, LE 2 Mbps) : 40 ch
Antenna specification Chip Antenna // Peak gain: 2.5 dBi
Power source DC 3.7 V (Battery)
H/W version 1.0
S/W version 2L17-1

**1.2. Information about derivative model**

N/A

1.3. Accessory information

Equipment	Manufacturer	Model	Serial No.	Power source
Cable	-	-	-	-

1.4. Device modifications

N/A

1.5. Worst case data rate

N/A

1.6. Measurement Uncertainty

Test Item	Uncertainty
Uncertainty for Conducted Frequency Tolerance test	10 Hz
Uncertainty for Conducted Bandwidth test	385 420 Hz
Uncertainty for Conducted Output power test	1.06 dB
Uncertainty for Conducted Transmitter Spurious Emission test	0.85 dB
Note. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.	



1.7. Sample calculation

Where relevant, the following sample calculation is provided
For all conducted test items :

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 1.24 + 10 = 11.24 \text{ (dB)}\end{aligned}$$

For Radiation test :

Field strength level (dB μ V/m) = Measured level (dB μ V) + Antenna factor (dB) + Cable loss (dB) – Amplifier gain (dB)

1.8 Frequency/channel operations

Ch.	Frequency (MHz)	Mode
<u>00</u>	<u>2 402</u>	<u>LE 1 Mbps</u> <u>LE 2 Mbps</u>
<u>:</u>	<u>:</u>	<u>:</u>
<u>39</u>	<u>2 480</u>	<u>LE 1 Mbps</u> <u>LE 2 Mbps</u>

Note.

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

1.9. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- Standards:
Certification Ordinance Article 2 Clause 1 Item19
- Test Methods:
Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43 Certification



2. Summary of tests

Parameter	Test results
Frequency Tolerance	Pass
Occupied Bandwidth	Pass
RF Output Power	Pass
Transmitter Spurious Emission	Pass
Secondary radiated emissions	Pass
Anti-Interference	Pass

Note:

- By the request of the applicant, test was performed with condition below:

2.4 GHz		
Mode	Frequency (MHz)	Power Setting value
LE 1 Mbps LE 2 Mbps	2 402 MHz ~ 2 480 MHz	-8



3. Test results

3.1. Frequency tolerance

Test setup



Test procedure

- (1) In case of unmodulated wave (serial or continuous burst), measure the frequency with frequency counter directly.
- (2) In case of burst wave, measure sufficient time and average with measured results.
- (3) In case of others, measure characteristic frequency with spectrum analyzer.

Limit

Permission deviation $\pm 50 \times 10^{-6}$

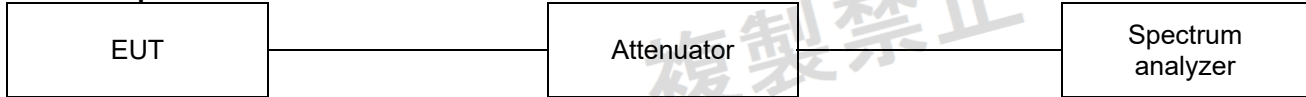
Test results

Test voltage		Test mode	Frequency (MHz)	Measure frequency (MHz)	Frequency deviation (Hz)	Deviation (ppm)	Verdict
(%)	(V)						
110	DC 4.07	LE 1 Mbps	2 402	2 401.970 248	-29 752	-12.39	Pass
			2 480	2 479.969 479	-30 521	-12.31	Pass
100	DC 3.70		2 402	2 401.970 245	-29 755	-12.39	Pass
			2 480	2 479.969 493	-30 507	-12.30	Pass
90	DC 3.33		2 402	2 401.970 247	-29 753	-12.39	Pass
			2 480	2 479.969 471	-30 529	-12.31	Pass
110	DC 4.07	LE 2 Mbps	2 402	2 401.970 246	-29 754	-12.39	Pass
			2 480	2 479.969 453	-30 547	-12.32	Pass
100	DC 3.70		2 402	2 401.970 248	-29 752	-12.39	Pass
			2 480	2 479.969 402	-30 598	-12.34	Pass
90	DC 3.33		2 402	2 401.970 244	-29 756	-12.39	Pass
			2 480	2 479.969 462	-30 538	-12.31	Pass



3.2. Occupied Bandwidth

Test setup



Test procedure

Spectrum analyzer is set as follows.

Center frequency : Test frequency

Sweep frequency range : 2 to 3.5 times of tolerances

Resolution bandwidth : Tolerance 3% of the facilities provided in the rules

Video bandwidth : Similar resolution bandwidth

Y axis scale : 10 dB/Div

Input level : Well above the noise level of Spectrum analyzer

Sweep time : The minimum time that measurement accuracy is guaranteed (In case of burst wave, one burst includes per sample)

Sweep mode : Continuous Sweep

Detection mode : Positive Peak (Note)

Display mode : Max Hold (Note)

Note: in case of OFDM and except burst wave is as follows.

Average processing times : More than 10 times

Detection mode : Sample

Limit

Equal or less than 26 MHz for OFDM equipment with 20 MHz channel bandwidth.

Test results

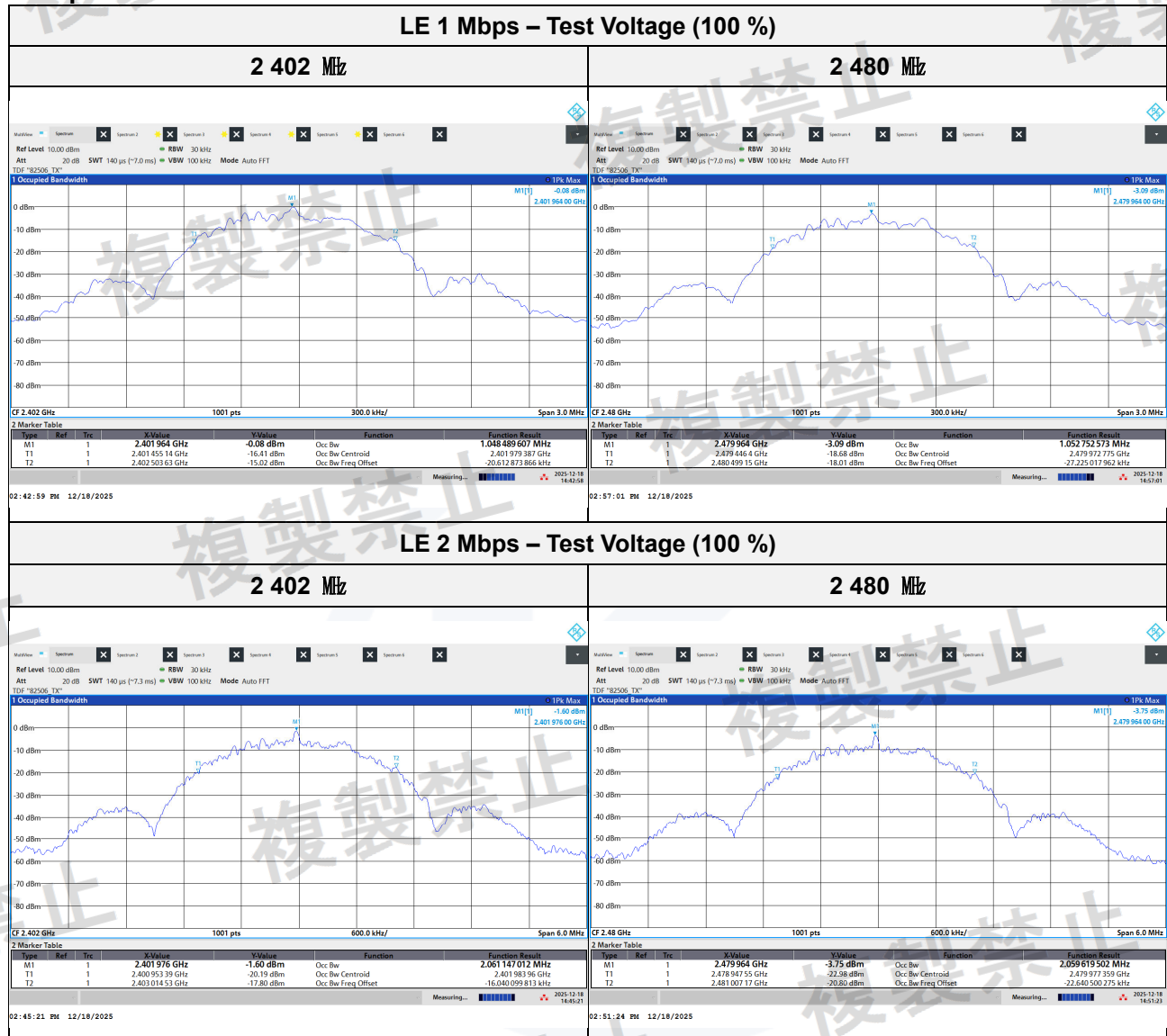
Test voltage		Test mode	Occupied Bandwidth (MHz)		Verdict
(%)	(V)		Frequency (2 402 MHz)	Frequency (2 480 MHz)	
110	DC 4.07	LE 1 Mbps	1.05	1.05	Pass
100	DC 3.70		1.05	1.05	Pass
90	DC 3.33		1.05	1.05	Pass
110	DC 4.07	LE 2 Mbps	2.03	2.06	Pass
100	DC 3.70		2.06	2.06	Pass
90	DC 3.33		2.04	2.06	Pass



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Test plots





3.3. RF output power

Test setup



Test procedure

- (1) Set the EUT at hopping off and modulation on.
- (2) Set the ETU operates at channel low, mid and high and normal/Upper/Lower voltage.
- (3) Connect the EUT to power meter.
- (4) Record the power level.

Limit

Test mode	Rate power (mW)	Upper(mW) / +20%	Limit (mW)
LE 1 Mbps, LE 2 Mbps	10	12	10

Test results

Test voltage		Test mode	Frequency (MHz)	Output power (dBm)	Output power (mW)	E.I.R.P (dBm)	Deviation (%)	Verdict
(%)	(V)							
110	DC 4.07	LE 1 Mbps	2 402	2.56	1.80	5.06	-81.97	Pass
			2 480	-0.02	1.00	2.48	-90.05	Pass
100	DC 3.70		2 402	2.59	1.82	5.09	-81.84	Pass
			2 480	-0.04	0.99	2.46	-90.09	Pass
90	DC 3.33		2 402	2.55	1.80	5.05	-82.01	Pass
			2 480	-0.08	0.98	2.42	-90.18	Pass
110	DC 4.07	LE 2 Mbps	2 402	2.63	1.83	5.13	-81.68	Pass
			2 480	-0.05	0.99	2.45	-90.11	Pass
100	DC 3.70		2 402	2.61	1.82	5.11	-81.76	Pass
			2 480	-0.03	0.99	2.47	-90.07	Pass
90	DC 3.33		2 402	2.58	1.81	5.08	-81.89	Pass
			2 480	-0.08	0.98	2.42	-90.18	Pass

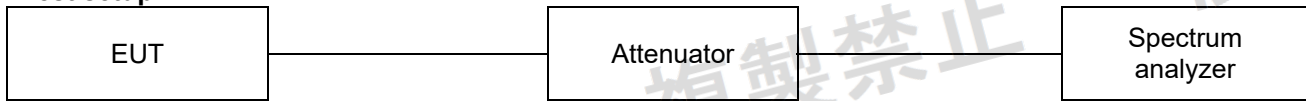
Note.

1. Output power is the result which the Burst Ratio is calculated.
2. E.I.R.P : Output power data + Ant. Max peak gain
3. Antenna gain : 2.5 dBi



3.4. Transmitter spurious emissions

Test setup



Test procedure

Setting of spectrum analyzer to measure spurious emission is as follows.

Sweep frequency range : $2\,387\text{ MHz} > f$ and $2\,496.5\text{ MHz} < f$,

$2\,387\text{ MHz} \leq f \leq 2\,400\text{ MHz}$ and $2\,483.5\text{ MHz} < f \leq 2\,496.5\text{ MHz}$

Resolution bandwidth : 1 MHz

Video bandwidth : Similar resolution bandwidth

Sweep time : The minimum time guaranteed measurement accuracy

Y axis scale : 10 dB/Div

Sweep mode : Single sweep

Detection mode : Positive Peak

Display mode : Maxhold

Limit

1. Less than $2\,387\text{ MHz}$: Equal or less than $2.5\mu\text{W/MHz}$ ($\approx -26\text{ dBm}$)
2. $2\,387\text{ MHz} \sim 2\,400\text{ MHz}$: Equal or less than $25\mu\text{W/MHz}$ ($\approx -16\text{ dBm}$)
3. $2\,483.5\text{ MHz} \sim 2\,496.5\text{ MHz}$: Equal or less than $25\mu\text{W/MHz}$ ($\approx -16\text{ dBm}$)
4. More than $2\,496.5\text{ MHz}$: Equal or less than $2.5\mu\text{W/MHz}$ ($\approx -26\text{ dBm}$)



Test results

Test item: Less than 2 387 MHz

Test voltage		Test mode	Frequency (MHz)	Measure frequency (MHz)	Level (dBm)	Level (μ W/MHz)	Verdict
(%)	(V)						
110	DC 4.07	LE 1 Mbps	2 402	2 272.80	-37.47	0.179	Pass
			2 480	2 352.90	-40.23	0.095	Pass
100	DC 3.70		2 402	2 275.20	-35.65	0.272	Pass
			2 480	2 352.90	-40.14	0.097	Pass
90	DC 3.33	LE 2 Mbps	2 402	2 275.20	-37.56	0.175	Pass
			2 480	2 352.90	-40.30	0.093	Pass
110	DC 4.07		2 402	2 275.20	-37.31	0.186	Pass
			2 480	2 352.90	-40.31	0.093	Pass
100	DC 3.70		2 402	2 275.20	-35.88	0.258	Pass
			2 480	2 352.90	-40.16	0.096	Pass
90	DC 3.33		2 402	2 272.80	-37.41	0.182	Pass
			2 480	2 352.90	-40.26	0.094	Pass

Test item: 2 387 MHz ~ 2 400 MHz

Test voltage		Test mode	Frequency (MHz)	Measure frequency (MHz)	Level (dBm)	Level (μ W/MHz)	Verdict
(%)	(V)						
110	DC 4.07	LE 1 Mbps	2 402	2 399.98	-23.50	4.467	Pass
			2 480	2 388.76	-46.35	0.023	Pass
100	DC 3.70		2 402	2 399.99	-21.53	7.031	Pass
			2 480	2 388.37	-46.30	0.023	Pass
90	DC 3.33	LE 2 Mbps	2 402	2 399.98	-23.38	4.592	Pass
			2 480	2 388.44	-46.52	0.022	Pass
110	DC 4.07		2 402	2 399.99	-18.50	14.125	Pass
			2 480	2 388.14	-46.42	0.023	Pass
100	DC 3.70		2 402	2 399.98	-18.78	13.243	Pass
			2 480	2 388.20	-46.13	0.024	Pass
90	DC 3.33		2 402	2 399.99	-18.61	13.772	Pass
			2 480	2 388.20	-46.89	0.020	Pass

**Test item: 2 483.5 MHz ~ 2 496.5 MHz**

Test voltage		Test mode	Frequency (MHz)	Measure frequency (MHz)	Level (dBm)	Level (μ W/MHz)	Verdict
(%)	(V)						
110	DC 4.07	LE 1 Mbps	2 402	2 493.78	-50.28	0.009	Pass
			2 480	2 483.51	-34.65	0.343	Pass
100	DC 3.70		2 402	2 493.33	-50.36	0.009	Pass
			2 480	2 483.52	-34.67	0.341	Pass
90	DC 3.33	LE 2 Mbps	2 402	2 493.96	-50.34	0.009	Pass
			2 480	2 438.51	-34.61	0.346	Pass
110	DC 4.07		2 402	2 492.77	-50.26	0.009	Pass
			2 480	2 483.53	-35.54	0.279	Pass
100	DC 3.70	LE 2 Mbps	2 402	2 493.73	-49.97	0.010	Pass
			2 480	2 483.51	-35.41	0.288	Pass
90	DC 3.33		2 402	2 493.87	-50.24	0.009	Pass
			2 480	2 483.51	-36.26	0.237	Pass

Test item: More than 2 496.5 MHz

Test voltage		Test mode	Frequency (MHz)	Measure frequency (MHz)	Level (dBm)	Level (μ W/MHz)	Verdict
(%)	(V)						
110	DC 4.07	LE 1 Mbps	2 402	2 532.50	-46.96	0.020	Pass
			2 480	2 604.50	-47.59	0.017	Pass
100	DC 3.70		2 402	2 532.50	-47.29	0.019	Pass
			2 480	2 604.50	-47.52	0.018	Pass
90	DC 3.33	LE 2 Mbps	2 402	2 532.50	-47.02	0.020	Pass
			2 480	2 604.50	-47.39	0.018	Pass
110	DC 4.07		2 402	2 532.50	-47.08	0.020	Pass
			2 480	2 604.50	-47.55	0.018	Pass
100	DC 3.70	LE 2 Mbps	2 402	2 532.50	-46.82	0.021	Pass
			2 480	2 604.50	-47.75	0.017	Pass
90	DC 3.33		2 402	2 532.50	-46.75	0.021	Pass
			2 480	2 604.50	-48.02	0.016	Pass



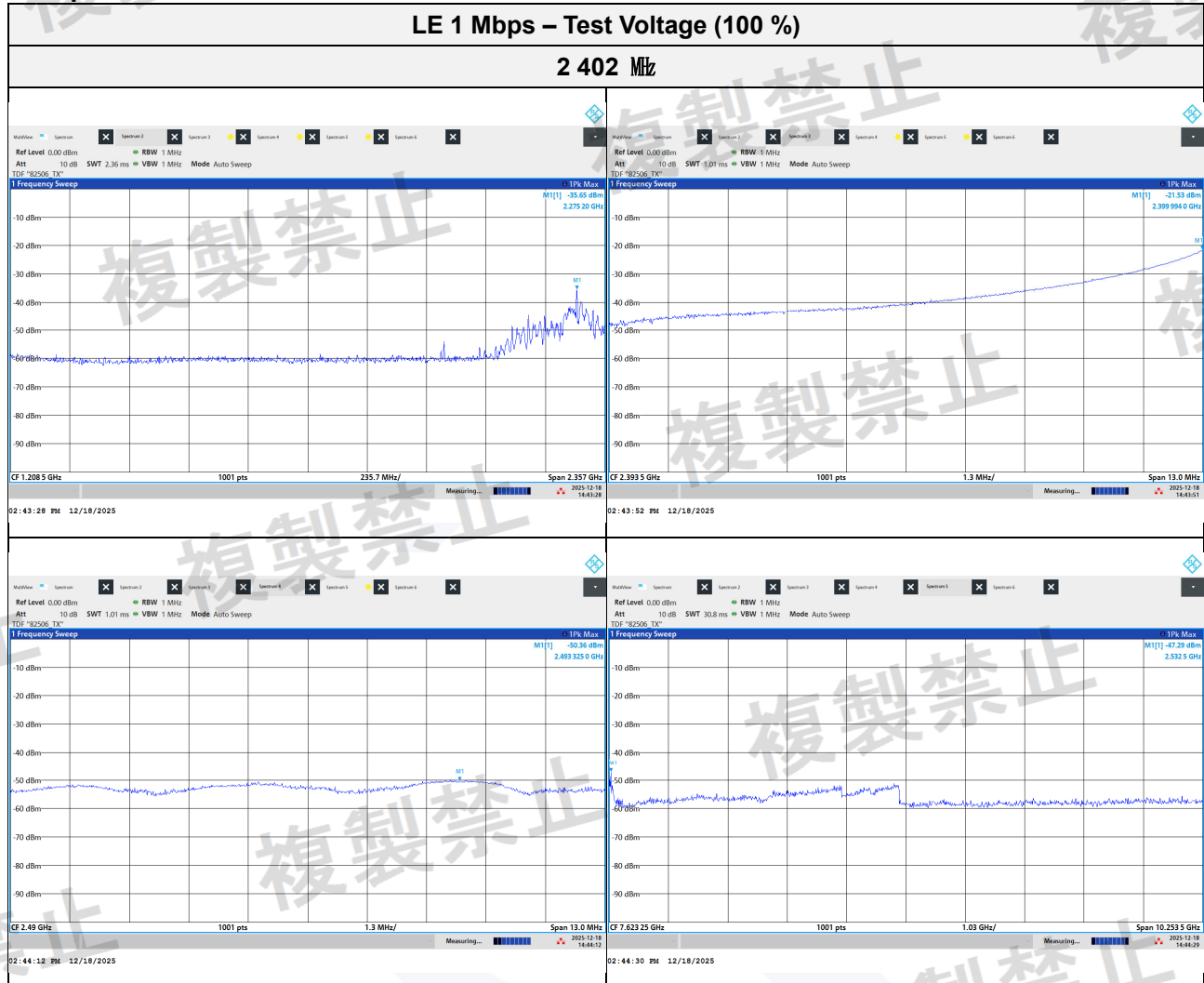
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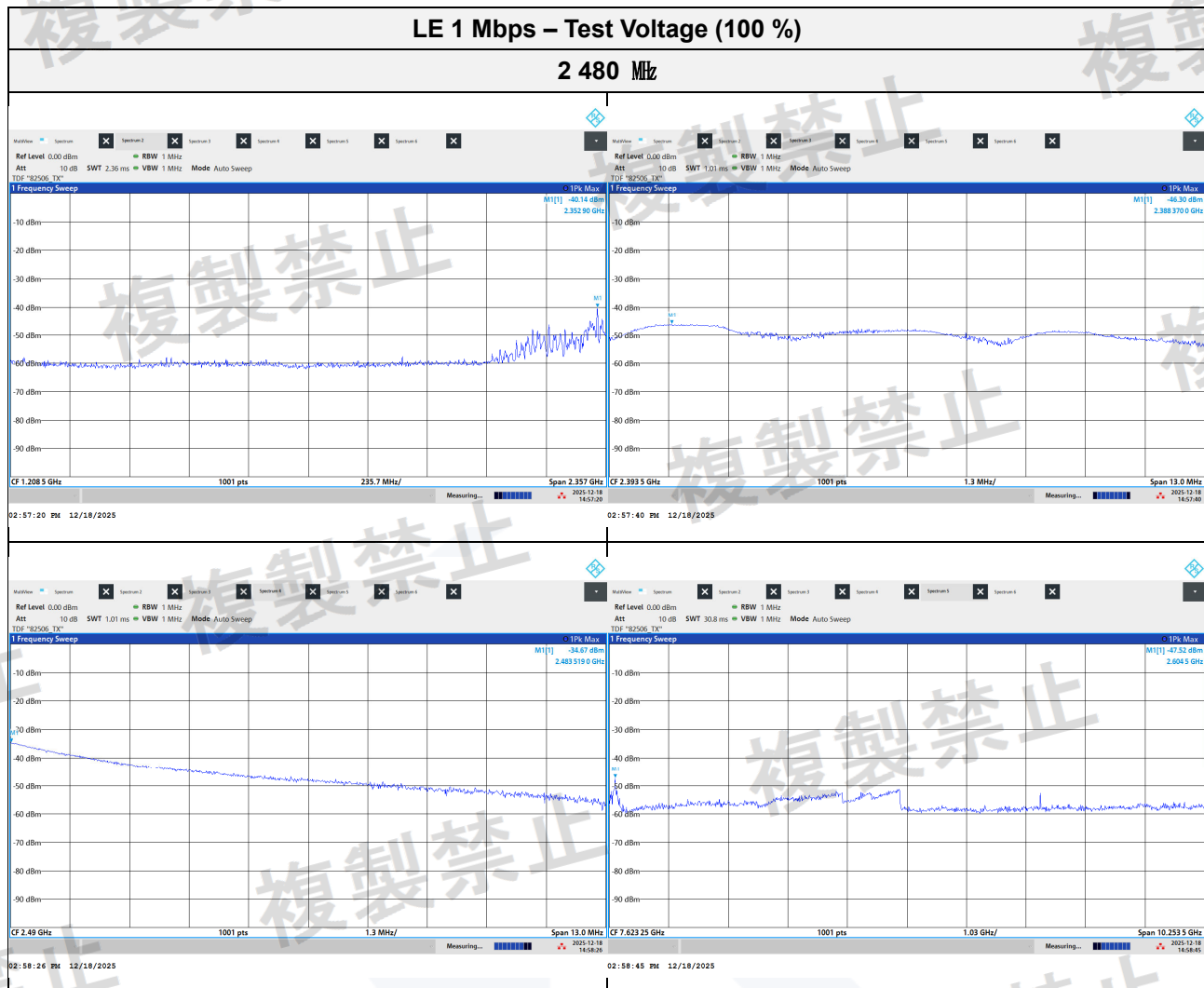
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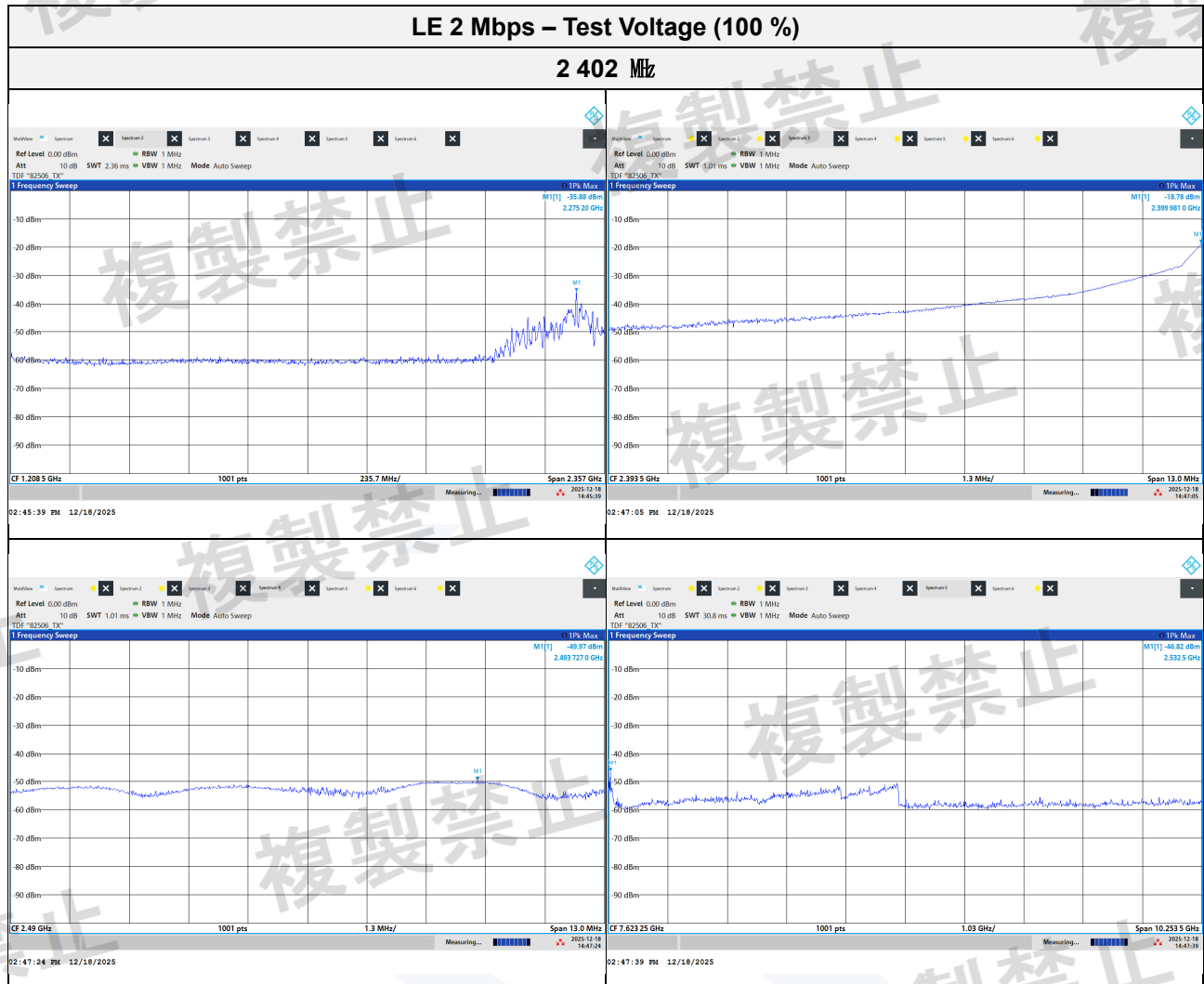
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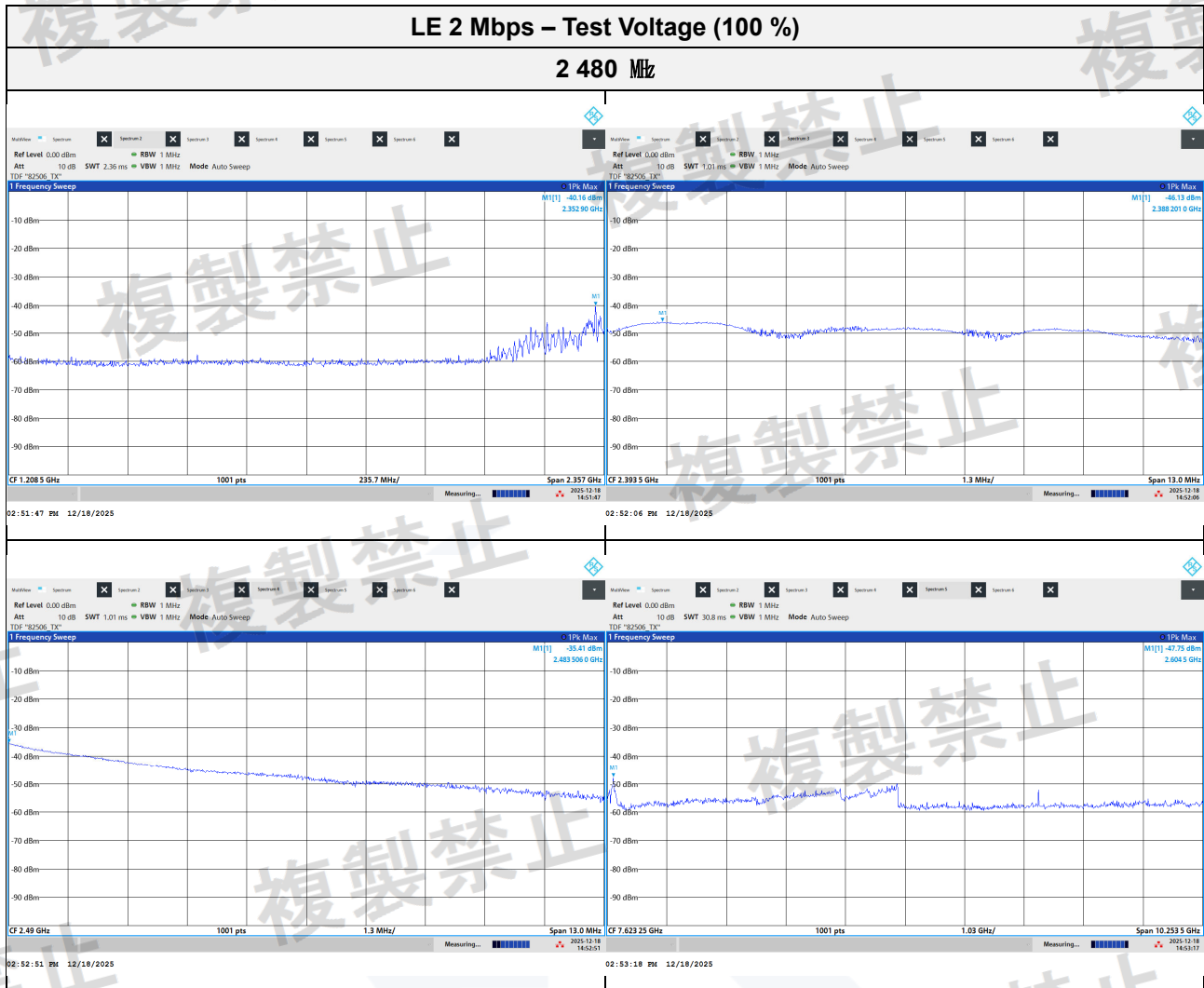
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Test plots





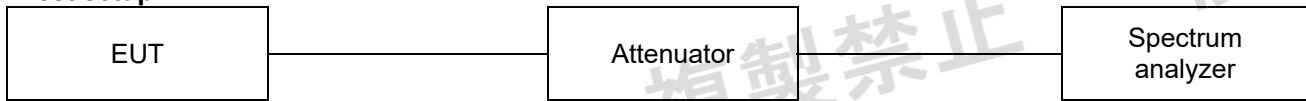






3.5. Secondary radiated emissions

Test setup



Test procedure

(1) Setting of spectrum analyzer is as follows while searching a spurious emission.

Sweep frequency range : From 30 MHz up to 12.5 GHz

Resolution bandwidth : Less than 1 GHz : 100 kHz, 1 GHz or more : 1 MHz

Video bandwidth : Same as resolution bandwidth

Sweep time : The minimum time guaranteed measurement accuracy

Y axis scale : 10 dB/Div

Sweep mode : Single sweep

Detection mode : Positive Peak

(2) Setting of spectrum analyzer is as follows while measuring a spurious emission.

Center frequency : Detected spurious frequency

Sweep frequency range : 0 Hz

Resolution bandwidth : Less than 1 GHz : 100 kHz, 1 GHz or more : 1 MHz

Video bandwidth : Same as resolution bandwidth

Sweep time : The minimum time guaranteed measurement accuracy

Y axis scale : 10 dB/Div

Sweep mode : Single sweep

Detection mode : Sample

Limit

1. Less than 1 GHz : Equal or less than 4 nW ($\approx$ -53.98 dBm)

2. 1 GHz ~ less than 12.5 GHz : Equal or less than 20 nW ($\approx$ -46.99 dBm)

**Test results****Test item: Less than ~ 1 GHz**

Test voltage		Test mode	Frequency (MHz)	Measure frequency (MHz)	Level (dBm)	Level (nW)	Verdict
(%)	(V)						
110	DC 4.07	LE 1 Mbps	2 402	92.50	-71.73	0.067	Pass
			2 480	92.50	-71.25	0.075	Pass
100	DC 3.70		2 402	92.50	-71.62	0.069	Pass
			2 480	92.50	-71.85	0.065	Pass
90	DC 3.33	LE 2 Mbps	2 402	92.50	-71.23	0.075	Pass
			2 480	92.50	-70.73	0.085	Pass
110	DC 4.07		2 402	92.50	-71.43	0.072	Pass
			2 480	92.50	-71.93	0.064	Pass
100	DC 3.70	LE 2 Mbps	2 402	92.50	-71.36	0.073	Pass
			2 480	92.50	-71.56	0.070	Pass
90	DC 3.33		2 402	92.50	-71.59	0.069	Pass
			2 480	92.50	-71.02	0.079	Pass

Test item: 1 GHz ~ less than 12.5 GHz

Test voltage		Test mode	Frequency (MHz)	Measure frequency (MHz)	Level (dBm)	Level (nW)	Verdict
(%)	(V)						
110	DC 4.07	LE 1 Mbps	2 402	7 497.00	-60.04	0.991	Pass
			2 480	7 450.00	-62.06	0.622	Pass
100	DC 3.70		2 402	7 497.00	-61.69	0.678	Pass
			2 480	7 427.00	-61.15	0.767	Pass
90	DC 3.33	LE 2 Mbps	2 402	7 497.00	-61.59	0.693	Pass
			2 480	7 427.00	-62.43	0.571	Pass
110	DC 4.07		2 402	7 286.00	-60.86	0.820	Pass
			2 480	7 474.00	-61.54	0.701	Pass
100	DC 3.70	LE 2 Mbps	2 402	7 403.00	-60.94	0.805	Pass
			2 480	7 474.00	-60.89	0.815	Pass
90	DC 3.33		2 402	7 485.00	-61.55	0.700	Pass
			2 480	7 474.00	-60.26	0.942	Pass



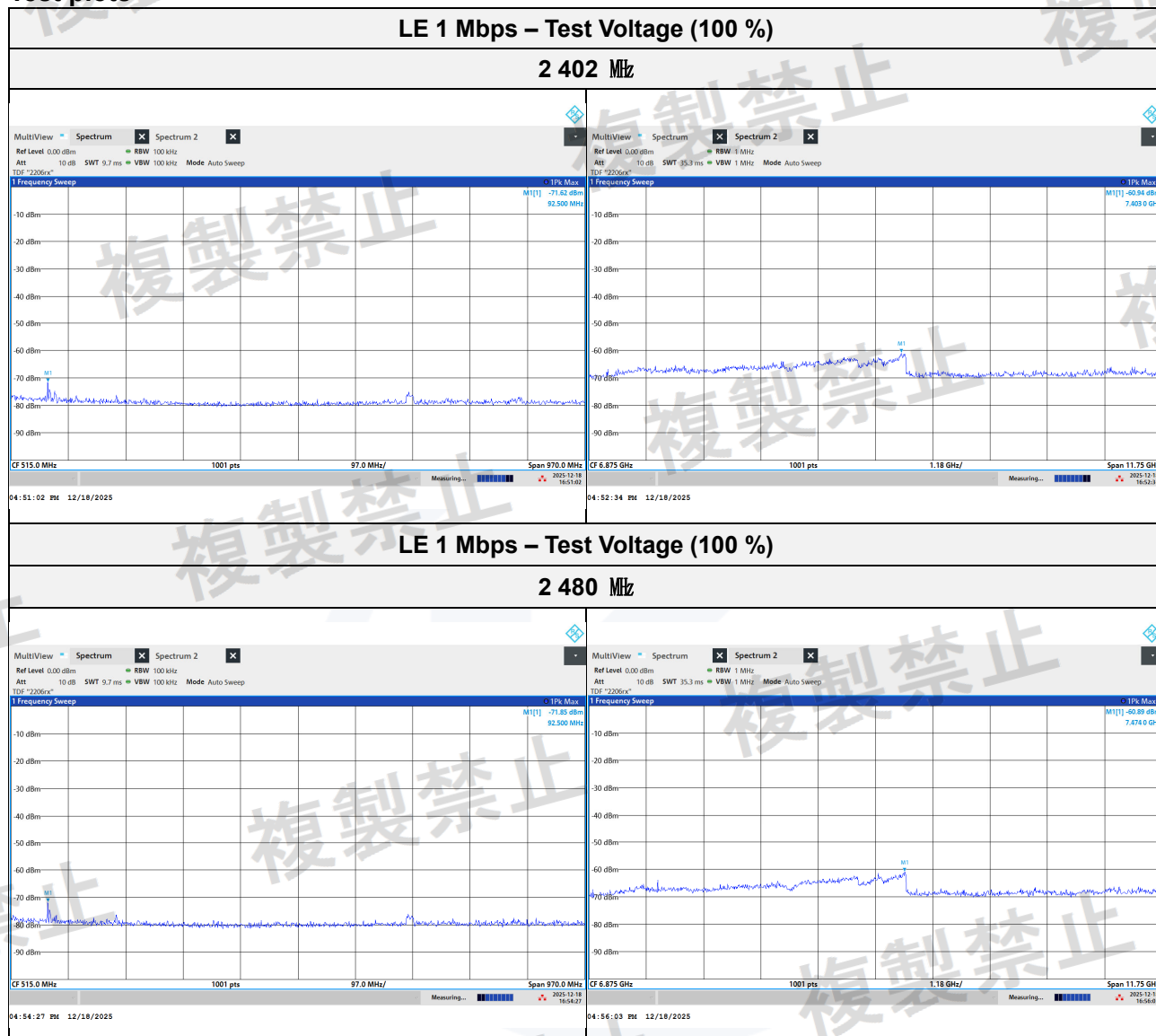
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Test plots



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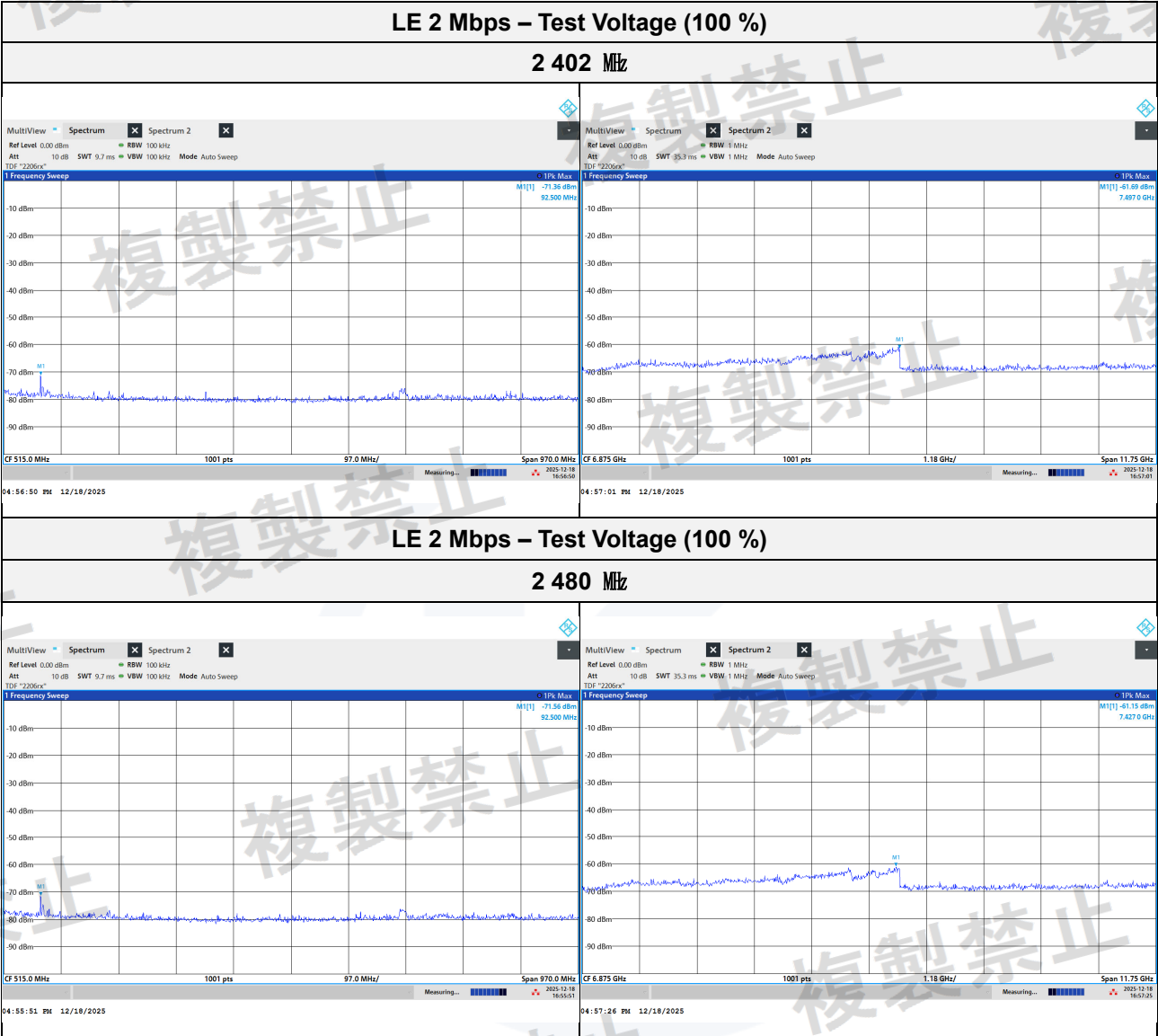
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3.6. Anti-interference function

Test setup



Limit

The identification code shall be 48 bits long.

Test results

Test voltage (V)	MODE	Identification code	Verdict
DC 3.70	LE	5D:68:FA:E3:F0:FC	Pass

**Appendix A. Measurement equipment**

Equipment 24-2 paragraph4 「ハ」	Manufacturer	Model	Serial No.	Calibration Interval	Calibration Lab	Calibration due.
SPECTRUM ANALYZER	R&S	FSV30	101389	1 year	HCT	2026.04.18 2027.01.06
SPECTRUM ANALYZER	R&S	FSV3030	101800	1 year	HCT	2026.01.10 2027.01.06
SPECTRUM ANALYZER	R&S	FSV40-N	102194	1 year	HCT	2026.07.31
ATTENUATOR	HP	8495B	110504721	1 year	HCT	2026.01.10 2027.01.06
SIGNAL GENERATOR	Anritsu	68369B	992113	1 year	HCT	2026.01.10 2027.01.06
Power Meter	Anritsu	ML2495A	1438001	1 year	HCT	2026.01.10 2027.01.29
Pulse Power Sensor	Anritsu	MA2411B	1339205	1 year	HCT	2026.01.10 2027.01.29
DC POWER SUPPLY	HP	6674A	US36370369	1 year	HCT	2026.06.09
Frequency Counter	HP	5352B	3049A1336	1 year	HCT	2026.01.15 2027.01.08
DIGITAL MULTI METER	TEKTRONIX	DMM916	138401	1 year	HCT	2026.01.14 2027.01.07

* Statement of Traceability: KES Co., Ltd. attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

* Cal.Method

- a) : Calibration conducted by the National Institute of Information and Communications Technology(NICT)(hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1)
- b) : Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)
- c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)
- d) : Calibration conducted by using measuring instruments and other equipment listed in the right column of Table No. 3 attached hereto, which shall have been given any of calibration, etc. listed above from a) to c)

Peripheral devices

Device	Manufacturer	Model No.	Serial No.
Notebook computer	LG Electronics	LG15N54	504NZJW27828
Test jig	N/A	N/A	N/A

The end.