

TEST REPORT

Applicant: Franklin Technology Inc.
Address: 906 JEI Platz, 186, Gasan digital 1-ro, Geumcheon-gu,
Seoul, 08502 South Korea
Equipment Type: 5G Module
Model Name: M3100L
Brand Name: Franklin Technology
FCC ID: XHG-M3100L
Test Standard: 47 CFR Part 2.1091
KDB 447498 D04 v01
Sample Arrival Date: N/A
Test Date: N/A
Date of Issue: Jan. 19, 2026

ISSUED BY:

Shanghai Tejet Communications Technology Co., Ltd. Testing Center



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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Jan. 19, 2026</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shanghai Tejet Communications Technology Co., Ltd. Testing Center
Address	1-2/F., Building 1, No. 222 Xuanlan Road, Xuanqiao Town, Pudong New District, Shanghai, China

1.2 Test Location

Name	Shanghai Tejet Communications Technology Co., Ltd. Testing Center
Location	1-2/F., Building 1, No. 222 Xuanlan Road, Xuanqiao Town, Pudong New District, Shanghai, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1352. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 29671.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Franklin Technology Inc.
Address	906 JEI Platz, 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, 08502 South Korea

2.2 Manufacturer Information

Manufacturer	Franklin Technology Inc.
Address	906 JEI Platz, 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, 08502 South Korea

2.3 General Description for Equipment under Test (EUT)

EUT Name	5G Module
Model Name Under Test	Franklin Technology
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	P1
Software Version	RG3100.TM.2079
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	3G Network WCDMA Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/12/13/25/26/66/71 LTE TDD Band 38/40/41/48 UL CA: CA_41C 5G SA n25/n41/n48/n66/n71/n77/n78 ENDC: DC_2A_n41A,DC_2A_n66A,DC_2A_n71A,DC_12A_n66A,DC_66A_n25A,DC_66A_n41A,DC_66A_n71A UL MIMO: n25/n41/n48/n66/n77
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	WCDMA,LTE,NR		
Frequency Range	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE B2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE B4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE B12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE B13	TX: 777 ~ 787 MHz	RX: 746 ~ 756 MHz
	LTE B25	TX: 1850 ~ 1915 MHz	RX: 1930 ~ 1995 MHz
	LTE Band26	TX: 814 ~ 824 MHz	RX: 859 ~ 869 MHz
		TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 38	TX: 2570 ~ 2620 MHz	RX: 2570 ~ 2620 MHz
	LTE Band 40	TX: 2305 ~ 2315 MHz	RX: 2305 ~ 2315 MHz
		TX: 2350 ~ 2360 MHz	RX: 2350 ~ 2360 MHz
	LTE Band 41	TX: 2496 ~ 2690 MHz	RX: 2496 ~ 2690 MHz
	LTE Band 48	TX: 3550 ~ 3700 MHz	RX: 3550 ~ 3700 MHz
	LTE B66	TX: 1710~ 1780 MHz	RX: 2110 ~ 2280 MHz
	LTE B71	TX: 663~ 698 MHz	RX: 617~ 652 MHz
	NR n25	TX: 1850 ~ 1915 MHz	RX: 1930 ~ 1995 MHz
	NR n41	TX: 2496 ~ 2690 MHz	RX: 2496 ~ 2690 MHz
	NR n48	TX: 3550 ~ 3700 MHz	RX: 3550 ~ 3700 MHz
	NR n66	TX: 1710~ 1780 MHz	RX: 2110 ~ 2280 MHz
	NR n71	TX: 663~ 698 MHz	RX: 617~ 652 MHz
	NR n77	TX: 3450 ~ 3550 MHz	RX: 3450 ~ 3550 MHz
		TX: 3700 ~ 3980 MHz	TX: 3700 ~ 3980 MHz
	NR n78	TX: 3450 ~ 3550 MHz	RX: 3450 ~ 3550 MHz
		TX: 3700 ~ 3800 MHz	TX: 3700 ~ 3800 MHz
Antenna Type	WWAN	PIFA Antenna	
Exposure Category	General Population/Uncontrolled Exposure		
Product Type	Mobile Device		

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01

3.2 Limit Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices

4 DEVICE CATEGORY AND LEVELS LIMITS

Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).
The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169

5 ASSESSMENT RESULT

5.1 Output Power

WCDMA			
Mode	Band 2	Band 4	Band 5
Conducted Power (dBm)	24.96	25.26	24.72
Antenna Gain (dBi)	-1.36	-1.91	-0.85
EIRP/ERP (dBm)	23.60	23.35	21.72
Note: This report listed the worst case conducted power value, please refer to RF test report No.BL-SH25C1393-502 for more details.			

LTE								
Mode	Band 2	Band 4	Band 5	Band 7	Band 12	Band 13	Band 25	Band 48
Conducted Power (dBm)	23.23	23.90	23.64	23.45	24.17	24.18	23.42	22.37
Antenna Gain (dBi)	-1.36	-1.91	-0.85	-1.34	-0.76	-0.87	-1.36	-0.03
EIRP/ERP (dBm)	21.87	21.99	20.64	22.11	21.26	21.16	22.06	22.34
Note: This report listed the worst case conducted power value, please refer to RF test report No.BL-SH25C1393-502 and BL-SH25C1393-503 for more details.								

LTE								
Mode	Band 26 (814-824MHz)	Band 26 (824-849MHz)	Band 38	Band 40 (2305-2315MHz)	Band 40 (2345-2360MHz)	Band 41	Band 66	Band 71
Conducted Power (dBm)	23.32	23.39	23.46	23.24	22.90	26.66	24.37	24.75
Antenna Gain (dBi)	-0.77	-0.85	-1.34	-0.15	-0.15	-0.72	-1.91	-1.06
EIRP/ERP (dBm)	20.40	20.39	22.12	23.09	22.75	25.94	22.46	21.54
Note: This report listed the worst case conducted power value, please refer to RF test report No.BL-SH25C1393-502 for more details.								

NR									
Mode	n25	n41	n66	n71	n77 (3450-3550MHz)	n77 (3700-3980MHz)	n78 (3450-3550MHz)	n78 (3700-3800MHz)	n48
Conducted Power (dBm)	22.90	29.64	24.83	22.69	30.44	29.21	26.04	25.09	24.82
Antenna Gain (dBi)	-1.36	-0.72	-1.91	-1.06	-2.53	-2.15	-0.18	-0.03	-2.15
EIRP/ERP(dBm)	21.54	28.92	22.92	19.48	27.91	27.06	25.86	25.06	22.67
Note: This report listed the worst case conducted power value, please refer to RF test report No.BL-SH25C1393-502 and BL-SH25C1393-503 for more details.									

CA	
Mode	CA_41C
Conducted Power (dBm)	27.76
Antenna Gain (dBi)	-0.72
EIRP/ERP (dBm)	27.04
Note: This report listed the worst case conducted power value, please refer to RF test report No.BL-SH25C1393-502 for more details.	

EN-DC							
Mode	DC_2A_41A	DC_2A_n66A	DC_2A_n71A	DC_12A_n66A	DC_66A_n25A	DC_66A_n41A	DC_66A_n71A
Conducted Power (dBm)	24.87	23.72	22.23	26.05	23.28	25.75	22.32
Antenna Gain (dBi)	-1.36	-1.91	-1.36	-1.96	-1.91	-1.91	-1.91
EIRP/ERP (dBm)	23.51	21.81	20.87	21.94	21.37	23.84	20.71
Note: This report listed the worst case conducted power value, please refer to RF test report No.BL-SH25C1393-502 for more details.							

UL MIMO						
Mode	n25	n41	n66	n77 (3450-3550MHz)	n77 (3700-3980MHz)	n48
Conducted Power (dBm)	27.08	27.30	26.26	27.28	29.18	24.60
Antenna Gain (dBi)	-1.36	-0.72	-1.91	-2.53	-2.15	-2.15
EIRP/ERP(dBm)	25.72	26.58	24.35	24.75	27.03	22.45
Note: This report listed the worst case conducted power value, please refer to RF test report No.BL-SH25C1393-502 and BL-SH25C1393-503 for more details.						

5.2 Tune-up power

Mode		Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
WCDMA	Band 2	【24.00,26.00】	【22.64,24.64】	【20.49,22.49】
	Band 4	【24.00,26.00】	【22.09,24.09】	【19.94,21.94】
	Band 5	【24.00,26.00】	/	【21.00,23.00】
LTE	Band 2	【22.00,24.00】	【20.64,22.64】	【18.49,20.49】
	Band 4	【23.00,25.00】	【21.09,23.09】	【18.94,20.94】
	Band 5	【23.00,25.00】	/	【20.00,22.00】
	Band 7	【22.00,24.00】	【20.66,22.66】	【18.51,20.51】
	Band 12	【23.00,25.00】	/	【20.09,22.09】
	Band 13	【23.00,25.00】	/	【19.98,21.98】
	Band 25	【22.00,24.00】	【20.64,22.64】	【18.49,20.49】
	Band 26	【22.00,24.00】	/	【19.08,21.08】
	Band 38	【22.00,24.00】	【20.66,22.66】	【18.51,20.51】
	Band 40	【22.00,24.00】	【21.85,23.85】	【19.70,21.70】
	Band 41	【26.00,28.00】	【25.28,27.28】	【23.13,25.13】
	Band 48	【21.00,23.00】	【20.97,22.97】	【18.82,20.82】
	Band 66	【23.00,25.00】	【21.09,23.09】	【18.94,20.94】
	Band 71	【24.00,26.00】	/	【20.79,22.79】
NR	n25	【22.00,24.00】	【20.64,22.64】	【18.49,20.49】
	n41	【29.00,31.00】	【28.28,30.28】	【26.13,28.13】
	n66	【23.00,25.00】	【21.09,23.09】	【18.94,20.94】
	n71	【22.00,24.00】	/	【18.79,20.79】
	n77	【29.00,31.00】	【26.47,28.47】	【24.32,26.32】
	n78	【25.00,27.00】	【24.82,26.82】	【22.67,24.67】
	n48	【24.00,26.00】	【21.85,23.85】	【19.70,21.70】
CA	CA_41C	【27.00,29.00】	【26.28,28.28】	【24.13,26.13】
EN-DC	DC_2A_n41A	【24.00,26.00】	【22.64,24.64】	【20.49,22.49】
	DC_2A_n66A	【23.00,25.00】	【21.09,23.09】	【18.94,20.94】
	DC_2A_n71A	【21.00,23.00】	【19.64,21.64】	【17.49,19.49】
	DC_12A_n66A	【25.00,27.00】	【23.04,25.04】	【20.89,22.89】
	DC_66A_n25A	【22.00,24.00】	【20.09,22.09】	【17.94,19.94】
	DC_66A_n41A	【25.00,27.00】	【23.09,25.09】	【20.94,22.94】
	DC_66A_n71A	【22.00,24.00】	【20.09,22.09】	【17.94,19.94】
UL MIMO	n25	【26.00,28.00】	【24.64,26.64】	【22.49,24.49】
	n41	【26.00,28.00】	【25.28,27.28】	【23.13,25.13】
	n66	【25.00,27.00】	【23.09,25.09】	【20.94,22.94】
	n77	【28.00,30.00】	【25.85,27.85】	【23.70,25.70】
	n48	【24.00,26.00】	【21.85,23.85】	【19.70,21.70】
Note1: ERP= EIRP -2.15dB.				
Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.				

5.3 RF Exposure Evaluation Result

Evolution mode		Frequency (MHz)	Distance (cm)	Maximum power Tune up(dBm)	Maximum power (mW)	Threshold Power (mW)	Verdict
WCDMA	Band 2	1850	20	26.00	398.11	3060.00	Pass
	Band 4	1710	20	26.00	398.11	3060.00	Pass
	Band 5	824	20	26.00	398.11	1680.96	Pass
LTE	Band 2	1850	20	24.00	251.19	3060.00	Pass
	Band 4	1710	20	25.00	316.23	3060.00	Pass
	Band 5	824	20	25.00	316.23	1680.96	Pass
	Band 7	2500	20	24.00	251.19	3060.00	Pass
	Band 12	699	20	25.00	316.23	1425.96	Pass
	Band 13	777	20	25.00	316.23	1585.08	Pass
	Band 25	1850	20	24.00	251.19	3060.00	Pass
	Band 26	814	20	24.00	251.19	1660.56	Pass
	Band 38	2570	20	24.00	251.19	3060.00	Pass
	Band 40	2305	20	24.00	251.19	3060.00	Pass
	Band 41	2496	20	28.00	630.96	3060.00	Pass
	Band 48	3550	20	23.00	199.53	3060.00	Pass
	Band 66	1710	20	25.00	316.23	3060.00	Pass
	Band 71	663	20	26.00	398.11	1352.52	Pass
NR	n25	1850	20	24.00	251.19	3060.00	Pass
	n41	2496	20	31.00	1258.93	3060.00	Pass
	n48	3550	20	26.00	398.11	3060.00	Pass
	n66	1710	20	25.00	316.23	3060.00	Pass
	n71	663	20	24.00	251.19	1352.52	Pass
	n77	3450	20	31.00	1258.93	3060.00	Pass
	n78	3450	20	27.00	501.19	3060.00	Pass
CA	CA_41C	2496	20	29.00	794.33	3060.00	Pass
EN-DC	DC_2A_n41A	1850	20	26.00	398.11	3060.00	Pass
	DC_2A_n66A	1710	20	25.00	316.23	3060.00	Pass
	DC_2A_n71A	663	20	23.00	199.53	1352.52	Pass
	DC_12A_n66A	699	20	27.00	501.19	1425.96	Pass

Evolution mode		Frequency (MHz)	Distance (cm)	Maximum power Tune up(dBm)	Maximum power (mW)	Threshold Power (mW)	Verdict
	DC_66A_n25A	1710	20	24.00	251.19	3060.00	Pass
	DC_66A_n41A	1710	20	27.00	501.19	3060.00	Pass
	DC_66A_n71A	663	20	24.00	251.19	1352.52	Pass
UL MIMO	n25	1850	20	28.00	630.96	3060.00	Pass
	n41	2496	20	28.00	630.96	3060.00	Pass
	n66	1710	20	27.00	501.19	3060.00	Pass
	n77	2450	20	30.00	1000.00	3060.00	Pass
	n48	3550	20	26.00	398.11	3060.00	Pass

5.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

1. The Testing Center guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. For the report with Accreditation Symbol, the items marked with "☆" are not within the accredited scope.
3. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the test report stamp.
4. The test data and results are only valid for the tested samples provided by the customer.
5. This report shall not be partially reproduced without the written permission of the Testing Center.
6. Any objection shall be raised to the Testing Center within 30 days after receiving the report.

--END OF REPORT--