

TEST REPORT

Job No. : GPEM2602000190EC
Test Report No. : F690501-RF-EMC004700
Applicant : ST SUNLAB Ltd.
Product Name : Tracking Device
Model Name : ST8000NA
Standards : FCC Part 15 Subpart B
FCC ID : WA2ST8000NA
Date of Receipt : February 25, 2026
Date of Test : March 6, 2026 ~ March 13, 2026
Date of Issue : March 24, 2026
Test Result : Complied

- 1) This test report does not assure KOLAS accreditation.
2) The results of this test report are effective only to the items tested.
3) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.

	Tested by (Name, signature)	Approved by (Name, signature)
Affirmation	Dojun Lee 	Paul Kang 

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Revision History

Revision	Report Number	Description
0	F690501-RF-EMC004700	Initial

1. Test Laboratory

1.1 General information

SGS Korea Co., Ltd. has been accredited by the agencies listed in the following table;

Accreditation	Accreditation bodies	Accreditation No.
KC	MSIT- RRA	KR0150
FCC	FCC (MRA)	
ISED	ISED (MRA)	
Vietnam-MIC	Vietnam-MIC	
Japan EMI	VCCI	C-14102, T-11156, R-13662, G-20037
KOLAS	KATS - KOLAS	Testing No.123
CBTL	IECEE	TL 146
SDPPI	SDPPI	-

2. General Information of E.U.T.

2.1 Applicant Information

Applicant	ST SUNLAB Ltd.
Applicant Address	A-1705, 1706, 32, Digital-ro 9-gil, Geumcheon-gu, Seoul, Republic of Korea, 08512
Manufacturer	ST SUNLAB Ltd.
Manufacturer Address	A-1705, 1706, 32, Digital-ro 9-gil, Geumcheon-gu, Seoul, Republic of Korea, 08512

2.2 General Information of E.U.T.

Classification	Description
Product Name	Tracking Device
Model Name	ST8000NA
Alt. Model Name	-
Model Differences	-
Serial No.	-
EMI Classification	Class A
Internal Clock Frequency	26 MHz(Wireless : 2 690 MHz)
Rated Power	12 Vd.c.
Tested Power	12 Vd.c.
H/W Version	rev 1.5
S/W Version	1.0.0.0
Port	U SIM Slot, DC IN
Components	-
Function	Compact vehicle tracking device for fleet management, security, and location based services.

2.3 Configurations of E.U.T

Description	Model	Serial No.	Manufacturer	Note
Main board	SD8000_V1.5	-	-	FCC ID: 2AJYU- 8BM0001

3. E.U.T. Operation and Test Configuration

3.1 Peripheral Equipments

Description	Model	Serial No.	Manufacturer	Note.
DC Power Supply	IT6720	-	ITECH	-
U-SIM	-	-	-	-

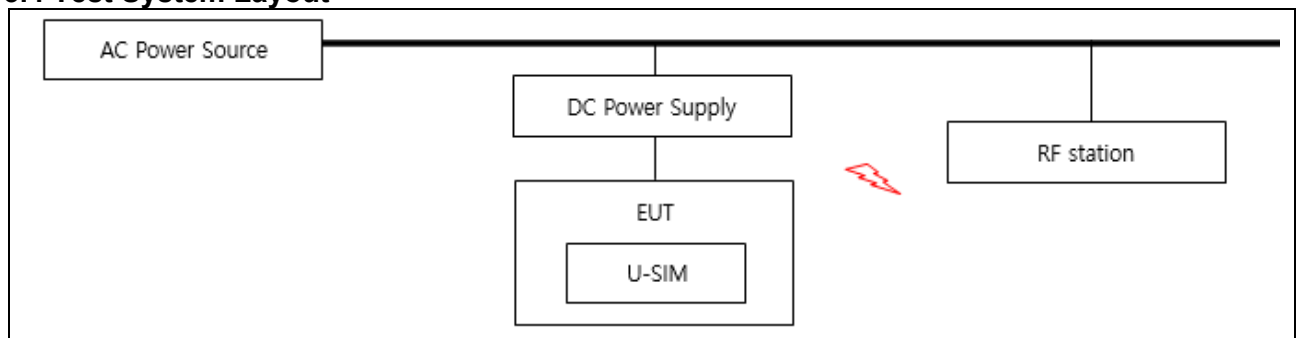
3.2 Cable List

Start		END		Cable Spec.		Used core
Name	I/O Port	Name	I/O Port	Length (m)	Shield	
EUT	DC IN	DC Power Supply	DC OUT	0.5	Unshielded	-
	-	U-SIM	-	-	-	-
	-	RF station	-	-	-	-

3.3 Operating Modes and Conditions

Operating mode	Operating condition
01 GPS	The condition that the EUT receives a GPS signal from the RF station.

3.4 Test System Layout



3.5 Modifications to the test items during testing

☒	No modifications done during testing
☐	Modification done during testing (see details below)
No.	Description of modification (if any)
1	
2	

4. Test Results

4.1 Summary

Test Items	Standards	Test Results
Conducted Emission	FCC Part 15 Subpart B Section 15.107 ANSI C63.4a:2017	N/A
Radiated Emission	FCC Part 15 Subpart B Section 15.109 ANSI C63.4a:2017	Complied

4.2 Note

- 1 Test Methods of all test items are performed according to the basic standard in subclause 4.1.
- 2

Emission Test

5.1 Test Method and Limits

Test Items	Measuring Frequency Range	RBW	Measuring Distance
Conducted Emission	0.15 MHz - 30 MHz	9 kHz	-
Radiated Emission	30 MHz - 1 GHz	120 kHz	10 m or 3 m
	Above 1 GHz	1 MHz	3 m

5.2 Test Limits

Frequency Range	Limits(dBμV)		Class
	Quasi-peak	CISPR-Average	
0.15 MHz - 0.5 MHz	79	66	Class A
0.5 MHz - 30 MHz	73	60	
0.15 MHz - 0.5 MHz	66 to 56 ^{Note1}	56 to 46 ^{Note1}	Class B
0.5 MHz - 5 MHz	56	46	
5 MHz - 30 MHz	60	50	

[Table 2.1 Conducted Emission Limits]

Frequency Range	Limits(dBμV/m)	Class
	Quasi-peak	
30 MHz - 88 MHz	39.0	Class A (10 m method)
88 MHz - 216 MHz	43.5	
216 MHz - 960 MHz	46.5	
960 MHz - 1 GHz	49.5	
30 MHz - 88 MHz	40.0	Class B (3 m method)
88 MHz - 216 MHz	43.5	
216 MHz - 960 MHz	46.0	
960 MHz - 1 GHz	54.0	

[Table 2.2 Radiated Emission Limits below 1 GHz]

Frequency Range	Limits(dBμV)		Class
	Peak	CISPR-Average	
Above 1 GHz	79.5	59.5	Class A
	74.0	54.0	Class B

[Table 2.3 Radiated Emission Limits Above 1 GHz ^{Note2}]

Note 1. The lower limit shall apply at the transition frequencies. The limit decreases linearly with the logarithm of that frequency.

Note 2. The limits of class A equipment is extrapolated using an extrapolation factor of 20 dB/decade because it was measured at 3 m distance not 10 m distance.

5.3 Radiated Emission

5.3.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Interval (Months)	Cal Date	Cal Due. Date
EMI TEST RECEIVER	ESU40	R&S	100075	12	2026-01-28	2027-01-28
TRILOG BROADBAND ANTENNA	VULB 9163	SCHWARZBECK	9163-437	12	2025-06-02	2026-06-02
Double Ridged Horn Antenna	HF907	R&S	102578	12	2025-05-21	2026-05-21
PRE-AMPLIFIER	AM-1431	MITEQ	1336160	12	2025-06-09	2026-06-09
AMPLIFIER	SCU 18	R&S	10070	12	2025-08-26	2026-08-26
RF STATION	MP9000	121056	ADIVC	12	2025-10-24	2026-10-24
RF Cable	EMH-1Lab-RE-02	-	-	6	2026-01-05	2026-07-05
RF Cable	EMH-1Lab-RE-03	-	-	6	2026-01-05	2026-07-05
RF Cable	EMH-1Lab-RE-04	-	-	6	2026-01-05	2026-07-05
RF Cable	EMH-1Lab-RE-05	-	-	6	2026-01-05	2026-07-05
RF Cable	EMD-RE-06	-	-	6	2026-01-05	2026-07-05

Note. Measuring software is below

- Branch Site : ELECTRA(V5.02.0) from R&S
- Branch Site-3 : EMC32(V10.40.10) from R&S
- Branch Site-4 : EMC32(V10.40.10) from R&S

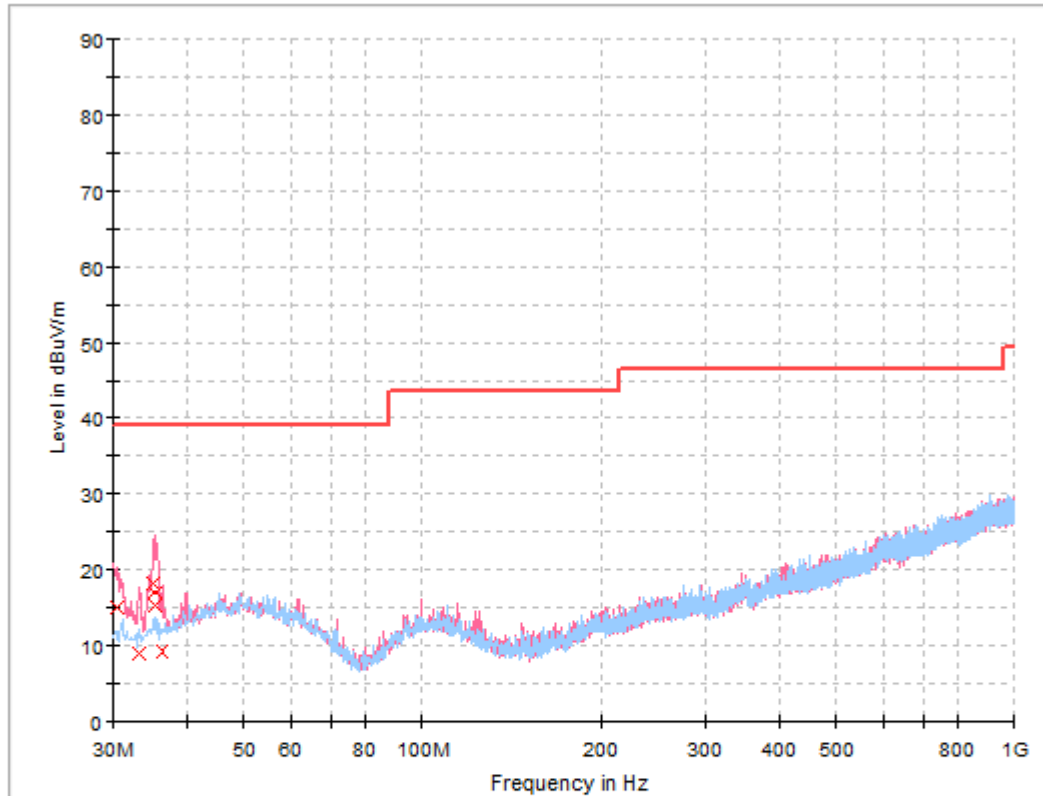
5.3.2 Environment Conditions

Test Site	10 m SEMI-ANECHOIC CHAMBER in Branch site-3
Temperature	(Minimum 17.0, Maximum 19.2) °C
Humidity	(Minimum 29.0, Maximum 31.0) % R.H.
Atmospheric Pressure	(Minimum 102.0, Maximum 102.3) kPa
Test Date	2026-03-06 (Below 1 GHz) 2026-03-13 (Above 1 GHz)

5.3.3 Test Result

Below 1 GHz (10 m method)

01 Mode



Final Result

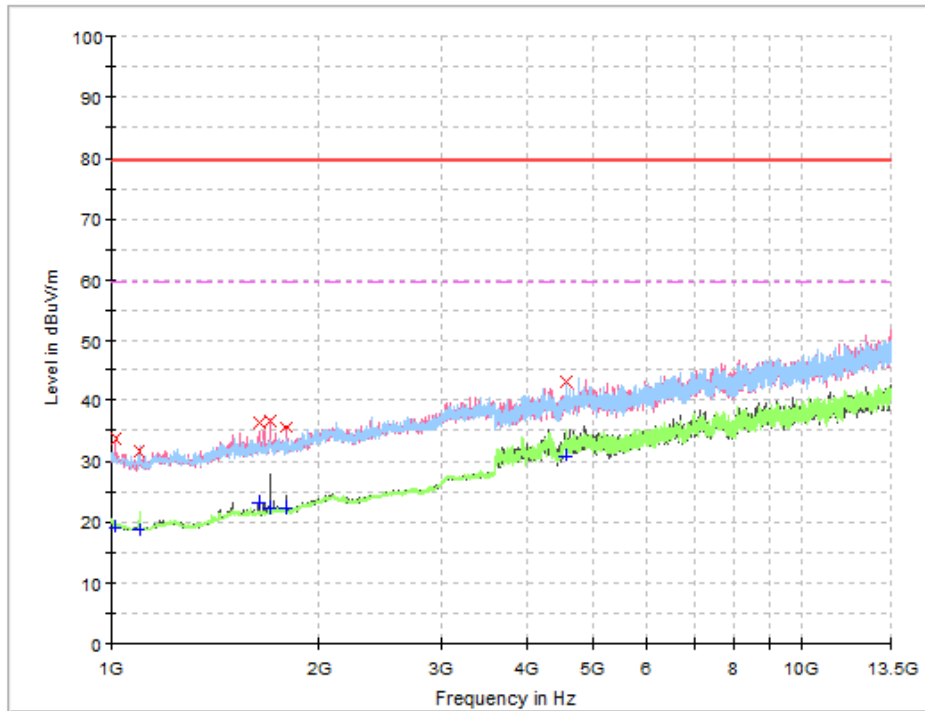
Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.485	14.97	39.00	24.03	15 000.0	120.000	130.0	V	28.0	-21.4
33.153	9.10	39.00	29.90	15 000.0	120.000	225.0	V	70.0	-21.4
35.093	18.23	39.00	20.77	15 000.0	120.000	345.0	V	174.0	-20.6
35.214	17.04	39.00	21.96	15 000.0	120.000	400.0	V	90.0	-20.6
35.335	15.24	39.00	23.76	15 000.0	120.000	113.0	V	245.0	-20.5
36.305	9.25	39.00	29.75	15 000.0	120.000	100.0	V	99.0	-20.2

Note. Measurement Uncertainty: See Appendix A

- POL H = Horizontal
- POL V = Vertical
- Margin = Limit – Quasi Peak
- Corr. = Antenna Factor + Cable loss – Amplifier Gain

Above 1 GHz (3 m method)

01 Mode



Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	CAverage (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1 018.700	33.68	---	79.50	45.82	15 000.0	1 000.000	100.0	V	1.0	-17.1
1 018.700	---	19.22	59.50	40.28	15 000.0	1 000.000	100.0	V	1.0	-17.1
1 098.600	31.87	---	79.50	47.63	15 000.0	1 000.000	100.0	H	266.0	-17.3
1 098.600	---	18.69	59.50	40.81	15 000.0	1 000.000	100.0	H	266.0	-17.3
1 639.200	36.51	---	79.50	42.99	15 000.0	1 000.000	100.0	V	330.0	-14.5
1 639.200	---	23.05	59.50	36.45	15 000.0	1 000.000	100.0	V	330.0	-14.5
1 698.700	---	22.42	59.50	37.08	15 000.0	1 000.000	100.0	V	10.0	-14.4
1 698.700	36.76	---	79.50	42.74	15 000.0	1 000.000	100.0	V	10.0	-14.4
1 799.000	35.69	---	79.50	43.81	15 000.0	1 000.000	100.0	V	346.0	-14.5
1 799.000	---	22.16	59.50	37.34	15 000.0	1 000.000	100.0	V	346.0	-14.5
4 564.900	---	30.98	59.50	28.52	15 000.0	1 000.000	100.0	V	152.0	-4.5
4 564.900	43.19	---	79.50	36.31	15 000.0	1 000.000	100.0	V	152.0	-4.5

Note. Measurement Uncertainty: See Appendix A

- AF = Antenna Factor
- POL H = Horizontal
- H = Height
- Corr. = AF + CL – AMP
- CL = Cable Loss
- POL V = Vertical
- Margin = Limit – Result
- AMP = Amplifier Gain
- A = Angle

** The value of 'Level' includes 'Corr.'.

Ex) In case

Freq ; 100 MHz, level ; 30 dB(μV/m), AF ; 10 dB/m, CL ; 4 dB, Amp ; 25 dB

Result = Level + AF + CL – Amp

$$= 30 + 10 + 4 - 25$$

$$= 19$$

Margin = Limit – Result

$$= 43.5 - 19$$

$$= 24.5$$

Appendix A: Measurement Uncertainty

Test Method		Measurement Uncertainty	
Conducted Emission	ENV216	3.0 dB	(The confidence level is 95 %, $k=2$)
	ESH2-Z5	2.8 dB	(The confidence level is 95 %, $k=2$)
	ESH3-Z6	3.0 dB	(The confidence level is 95 %, $k=2$)
Conducted Emission - Signal	ISN T800	5.3 dB	(The confidence level is 95 %, $k=2$)
	ISNT8-Cat6	5.4 dB	(The confidence level is 95 %, $k=2$)
	ISN S751	6.8 dB	(The confidence level is 95 %, $k=2$)
Disturbance Voltage at Antenna Terminal		2.4 dB	(The confidence level is 95 %, $k=2$)
Radiated Emission	9 kHz - 30 MHz	Horizontal	3.4 dB (The confidence level is 95 %, $k=2$)
		Vertical	3.4 dB (The confidence level is 95 %, $k=2$)
	30 MHz - 1 000 MHz	Horizontal	4.6 dB (The confidence level is 95 %, $k=2$)
		Vertical	5.0 dB (The confidence level is 95 %, $k=2$)
	1 GHz - 18 GHz	Horizontal	3.6 dB (The confidence level is 95 %, $k=2$)
		Vertical	3.6 dB (The confidence level is 95 %, $k=2$)

Table A.1 Measurement Uncertainty of Branch Site

Test Method		Measurement Uncertainty	
Conducted Emission		ENV216	3.3 dB (The confidence level is 95 %, $k=2$)
		ESH3-Z6	3.3 dB (The confidence level is 95 %, $k=2$)
		ESH2-Z5	3.2 dB (The confidence level is 95 %, $k=2$)
		NNLK8129	3.2 dB (The confidence level is 95 %, $k=2$)
Conducted Emission - Signal		ISN T800	5.5 dB (The confidence level is 95 %, $k=2$)
		ISN ST08	6.6 dB (The confidence level is 95 %, $k=2$)
Radiated Emission	9 kHz - 30 MHz	Horizontal	3.5 dB (The confidence level is 95 %, $k=2$)
		Vertical	3.5 dB (The confidence level is 95 %, $k=2$)
	30 MHz - 1 000 MHz	Horizontal	4.4 dB (The confidence level is 95 %, $k=2$)
		Vertical	5.0 dB (The confidence level is 95 %, $k=2$)
	1 GHz - 18 GHz	Horizontal	3.8 dB (The confidence level is 95 %, $k=2$)
		Vertical	4.1 dB (The confidence level is 95 %, $k=2$)

Table A.2 Measurement Uncertainty of Branch Site-3

Test Method		Measurement Uncertainty
Conducted Emission	ENV216	3.5 dB (The confidence level is 95 %, $k=2$)
	ESH2-Z6	3.4 dB (The confidence level is 95 %, $k=2$)
	ESH3-Z5	3.4 dB (The confidence level is 95 %, $k=2$)
	NNLK8129	3.4 dB (The confidence level is 95 %, $k=2$)
Conducted Emission - Signal	ISN T800	5.6 dB (The confidence level is 95 %, $k=2$)
	ISN ST08	5.6 dB (The confidence level is 95 %, $k=2$)
Radiated Emission	9 kHz - 30 MHz (Triple Loop Ant.)	2.6 dB (The confidence level is 95 %, $k=2$)
	9 kHz - 30 MHz (Loop Ant.)	Horizontal 4.2 dB (The confidence level is 95 %, $k=2$)
		Vertical 4.2 dB (The confidence level is 95 %, $k=2$)
	30 MHz - 1 000 MHz	Horizontal 5.4 dB (The confidence level is 95 %, $k=2$)
		Vertical 5.7 dB (The confidence level is 95 %, $k=2$)
	1 GHz - 18 GHz	Horizontal 4.6 dB (The confidence level is 95 %, $k=2$)
		Vertical 4.6 dB (The confidence level is 95 %, $k=2$)

Table A.3 Measurement Uncertainty of Branch Site-4

- End of Test Report -