

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 1 of 27

TEST REPORT

| Test Result: | Pass* | | | |
|---------------------------|---|--|--|--|
| Date of Issue: | 2024-09-23 | | | |
| Date of Test: | 2024-08-31 to 2024-09-19 | | | |
| Date of Receipt: | 2024-08-13 | | | |
| Standard(s) : | 47 CFR Part 15, Subpart C | | | |
| FCC ID: | 2AJ9T-21011 | | | |
| * | Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical. | | | |
| Model No.: | SenseFace 4A, SenseFace 4B, SenseFace 4C, FaceDepot 5A, | | | |
| EUT Name: | Smart Terminal | | | |
| Equipment Under Test (EUT |): | | | |
| Address of Manufacturer: | No.32.Pingshan Industrial Avenue, Tangxia Town, Dongguan City, Guangdong Province, China 523728 | | | |
| Manufacturer: | ZKTECO CO., LTD. | | | |
| Address of Applicant: | No.32.Pingshan Industrial Avenue, Tangxia Town, Dongguan City, Guangdong Province, China 523728 | | | |
| Applicant: | ZKTECO CO., LTD. | | | |
| Application No.: | SZCR2408003145AT | | | |

* In the configuration tested, the EUT complied with the standards specified above.

Keny. XM

Keny Xu EMC Laboratory Manager



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction forgery or falsification of the content or appearance of this document is unavful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
 Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: Ch.Doccheck@sgs.com" (86-755) 26710594 www.sgsgroup.com.cn.
 It. Withwithy IM. Middle seding Siden & Simplen Guandong China 518057 t (86-755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区MI−10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 2 of 27

| Revision Record | | | | | | |
|-----------------|---------|------------|----------|----------|--|--|
| Version | Chapter | Date | Modifier | Remark | | |
| 01 | | 2024-09-23 | | Original | | |
| | | | | | | |
| | | | | | | |

| Authorized for issue by: | | | |
|--------------------------|----------------------------|---|--|
| | Bolisonti | | |
| | Edison Li/Project Engineer | - | |
| | Erric Fu | | |
| | Eric Fu/Reviewer | - | |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CAL Doccheck@ags.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 3 of 27

Test Summary 2

| Radio Spectrum Technical Requirement | | | | | | |
|--------------------------------------|------------------------------|--------|-------------------------------------|--------|--|--|
| Item | Standard | Method | Requirement | Result | | |
| Antenna Requirement | 47 CFR Part 15, Subpart C | N/A | 47 CFR Part 15, Subpart C 15.203 | Pass | | |

| Radio Spectrum Matter Part | | | | | | |
|---|------------------------------|--------------------------------------|--|--------|--|--|
| Item | Standard | Method | Requirement | Result | | |
| 20dB Bandwidth | | ANSI C63.10 (2013) Section 6.9.2 | 47 CFR Part 15, Subpart C 15.215 | Pass | | |
| Conducted Emissions at AC Mains Power Port (150kHz-30MHz) | | ANSI C63.10 (2013) Section 6.2 | 47 CFR Part 15, Subpart C 15.207 | Pass | | |
| Restricted Bands | 47 CFR Part 15, Subpart C | ANSI C63.10 (2013) Section 6.10.5 | 47 CFR Part 15, Subpart C 15.205 | Pass | | |
| Radiated Emissions (9kHz-30MHz) | | ANSI C63.10 (2013) Section 6.4 | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass | | |
| Radiated Emissions (30MHz-1GHz) | | ANSI C63.10 (2013) Section 6.5 | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass | | |

Remark:

Model No.: SenseFace 4A, SenseFace 4B, SenseFace 4C, FaceDepot 5A, FaceDepot 4B

Only the model SenseFace 4A was tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only difference on model name.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区MI-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 4 of 27

3 Contents

| | | Page |
|---|---|----------|
| 1 | Cover Page | 1 |
| 2 | Test Summary | 3 |
| 2 | Contento | 4 |
| 3 | Contents | |
| 4 | General Information | 6 |
| | 4.1 Details of E.U.T. | 6 |
| | 4.2 Description of Support Units | 6 |
| | 4.3 Measurement Uncertainty | 6 |
| | 4.4 Test Location | 7 |
| | 4.5 Test Facility | 7 |
| | 4.6 Deviation from Standards | 7 |
| | 4.7 Abnormalities from Standard Conditions | |
| 5 | Equipment List | 8 |
| 6 | Radio Spectrum Technical Requirement | |
| · | 6.1 Antonno Boquiroment | 10 |
| | 6.1.1 Test Requirement: | 10 10 |
| | 6.1.2 Conclusion | 10 10 |
| 7 | Radio Spectrum Matter Test Results | 11 |
| ' | | |
| | 7.1 200B Bandwidth | |
| | 7.1.1 E.U.I. Operation | |
| | 7.1.2 Test Mode Description | |
| | 7.1.5 Test Getup Diagram | |
| | 7.2 Conducted Emissions at AC Mains Power Port (150kHz-30MHz) | |
| | 7.2.1 E.U.T. Operation | |
| | 7.2.2 Test Mode Description | 13 |
| | 7.2.3 Test Setup Diagram | 13 |
| | 7.2.4 Measurement Procedure and Data | 14 |
| | 7.3 Restricted Bands | 17 |
| | 7.3.1 E.U.T. Operation | |
| | 7.3.2 Test Mode Description | |
| | 7.3.3 Test Setup Diagram | |
| | 7.3.4 Intersteinent Procedure and Data | 18 10 |
| | 7.4 Rauialeu EIIIISSIUIIS (\Im RECZ-SUIVIEZ) | ۱9 ۱۵ |
| | 7.4.2 Test Mode Description | ۳۹ 20 |
| | 7.4.3 Test Setup Diagram | |
| | 7.4.4 Measurement Procedure and Data | 20 |
| | 7.5 Radiated Emissions (30MHz-1GHz) | 23 |
| | 7.5.1 E.U.T. Operation | 23 |
| | | |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CAL Doccheck@ags.com No.1 Workshop, M-10, Middle Section, Science & Technology Part, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



9

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

| SZEMC-TRF-01 | Rev. A/1 | Report No.: SZCR240800314504 | | |
|--------------|--------------------------------|------------------------------|---------|----|
| | | Page: | 5 of 27 | |
| 7.5.2 | Test Mode Description | | | 23 |
| 7.5.3 | Test Setup Diagram | | | 23 |
| 7.5.4 | Measurement Procedure and Data | | | 24 |
| 8 Test Se | etup Photo | | | 27 |
| | | | | |

EUT Constructional Details (EUT Photos).....27



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN. Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 6 of 27

4 **General Information**

Details of E.U.T. 4.1

| Power supply: | Powered by DC 12V from external power supply | | | |
|----------------------|---|--|--|--|
| | Model: ADS-40SI-12-3 12036E | | | |
| | Input: AC 100-240V, 50/60Hz, Max 1.0A | | | |
| | Output: DC 12V, 3.0A, 36W | | | |
| Cable(s): | DC Cable from adapter 1.8m unshielded with one core | | | |
| | AC Cable from adapter 1.5m unshielded | | | |
| Modulation Type: | ASK | | | |
| Operation Frequency: | 125KHz | | | |
| Antenna Type: | Loop Antenna | | | |

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|-------------|--------------|-----------------------|------------|
| RF Cable | SGS | N/A(Cable Loss:0.6dB) | N/A |

4.3 Measurement Uncertainty

| Test Item | Measurement Uncertainty |
|---|---|
| 20dB Bandwidth | ± 0.3% |
| Conducted Emissions at AC Mains Power Port (150kHz-30MHz) | ± 3.1dB |
| Restricted Bands | ± 0.3% |
| Radiated Emissions (9kHz-30MHz) | ± 3.6dB |
| Radiated Emissions (30MHz-1GHz) | \pm 6.0dB for 3m; \pm 5.0dB for 10m |

Remark:

The Ulab (lab Uncertainty) is less than Ucispr/ETSI (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 7 of 27

4.4 Test Location

All tests were performed at: SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057. Tel: +86 755 2601 2053 Fax: +86 755 2671 0594 No tests were sub-contracted.

4.5 Test Facility

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

A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz. Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC – Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

Innovation. Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 8 of 27

5 **Equipment List**

| 20dB Bandwidth | | | | | |
|----------------------|-----------------|-------------------|---------------|------------|--------------|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
| DC Power Supply | Zhao Xin | PS-305D | SEM011-13 | 2024-08-14 | 2025-08-13 |
| Spectrum Analyzer | Rohde & Schwarz | FSP30 | SEM004-06 | 2024-09-14 | 2025-09-13 |
| Measurement Software | TST PASS | TST PASS V2.0 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM031-01 | 2024-07-06 | 2025-07-05 |
| Attenuator | Huber+Suhner | 6620_SMA-50- 1 | SEM021-09 | 2024-03-27 | 2025-03-26 |

| Conducted Emissions at AC Mains Power Port (150kHz-30MHz) | | | | | |
|---|------------------|----------------------|---------------|------------|--------------|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
| Shielding Room | ZhongYu Electron | GB-88 | SEM001-06 | 2022-05-14 | 2025-05-13 |
| EMI Test Receiver | Rohde&Schwarz | ESCI | SEM004-02 | 2024-03-14 | 2025-03-13 |
| Measurement Software | AUDIX | e3 V8.2014-6- 27a | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM024-01 | 2024-07-06 | 2025-07-05 |
| LISN | Rohde&Schwarz | ENV216 | SEM007-01 | 2024-08-15 | 2025-08-14 |
| LISN | ETS-LINDGREN | 3816/2 | SEM007-02 | 2024-03-14 | 2025-03-13 |

| Restricted Bands | | | | | |
|----------------------|-----------------|-------------------|---------------|------------|--------------|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
| DC Power Supply | Zhao Xin | PS-305D | SEM011-13 | 2024-08-14 | 2025-08-13 |
| Spectrum Analyzer | Rohde & Schwarz | FSP30 | SEM004-06 | 2024-09-14 | 2025-09-13 |
| Measurement Software | TST PASS | TST PASS V2.0 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM031-01 | 2024-07-06 | 2025-07-05 |
| Attenuator | Huber+Suhner | 6620_SMA-50- 1 | SEM021-09 | 2024-03-27 | 2025-03-26 |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>https://www.sgs.com/en/Terms-and-Conditions</u>. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CM_Doccheck@gs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 9 of 27

| Radiated Emissions (9k | Radiated Emissions (9kHz-30MHz) | | | | | |
|------------------------------|---------------------------------|---------------------|---------------|------------|--------------|--|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date | |
| 10m Semi-Anechoic Chamber | SAEMC | FSAC1018 | SEM001-03 | 2024-03-26 | 2025-03-25 | |
| MXE EMI receiver | KEYSIGHT | N9038A | SEM004-16 | 2024-08-14 | 2025-08-13 | |
| Trilog-Broadband Antenna | Schwarzbeck | VULB9168 | SEM003-18 | 2023-09-23 | 2025-09-22 | |
| Pre-amplifier | Sonoma Instrument Co | 310N | SEM005-04 | 2024-03-27 | 2025-03-26 | |
| Loop Antenna | ETS-Lindgren | 6502 | SEM003-08 | 2023-11-20 | 2025-11-19 | |
| Measurement Software | AUDIX | e3 V8.2014-6- 27 | N/A | N/A | N/A | |
| Coaxial Cable | SGS | N/A | SEM029-01 | 2024-07-06 | 2025-07-05 | |

| Radiated Emissions (30 | Radiated Emissions (30MHz-1GHz) | | | | | |
|-------------------------------|---------------------------------|---------------------|---------------|------------|--------------|--|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date | |
| 10m Semi-Anechoic Chamber | SAEMC | FSAC1018 | SEM001-03 | 2024-03-26 | 2025-03-25 | |
| MXE EMI receiver | KEYSIGHT | N9038A | SEM004-16 | 2024-08-14 | 2025-08-13 | |
| Trilog-Broadband Antenna | Schwarzbeck | VULB9168 | SEM003-18 | 2023-09-23 | 2025-09-22 | |
| Pre-amplifier | Sonoma Instrument Co | 310N | SEM005-04 | 2024-03-27 | 2025-03-26 | |
| Loop Antenna | ETS-Lindgren | 6502 | SEM003-08 | 2023-11-20 | 2025-11-19 | |
| Measurement Software | AUDIX | e3 V8.2014-6- 27 | N/A | N/A | N/A | |
| Coaxial Cable | SGS | N/A | SEM029-01 | 2024-07-06 | 2025-07-05 | |

| General used equipmen | t | | | | |
|------------------------------------|---|-----------|---------------|------------|--------------|
| Equipment | Manufacturer | Model No. | Inventory No. | Cal Date | Cal Due Date |
| Humidity/ Temperature Indicator | deli | 8838 | SEM002-32 | 2024-07-24 | 2025-07-23 |
| Humidity/ Temperature Indicator | deli | 8838 | SEM002-33 | 2024-07-24 | 2025-07-23 |
| Barometer | Changchun Meteorological Industry Factory | DYM3 | SEM002-01 | 2024-03-18 | 2025-03-17 |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CAL Doccheck@ags.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 10 of 27

Radio Spectrum Technical Requirement 6

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. Refer to internal photos



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 11 of 27

7 Radio Spectrum Matter Test Results

7.1 20dB Bandwidth

| Test Requirement | 47 CFR Part 15, Subpart C 15.215 |
|------------------|----------------------------------|
| Test Method: | ANSI C63.10 (2013) Section 6.9.2 |
| Limit: | For report reference only |

7.1.1 E.U.T. Operation

Operating Environment:

| Temperature: | 24.7 °C | Humidity: | 42.7 % RH | Atmospheric Pressure: | 1020 | mbar |
|--------------|---------|-----------|-----------|-----------------------|------|------|

7.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---|
| Final test | 02 | TX mode(125KHz)_Keep the EUT in transmitting mode |

7.1.3 Test Setup Diagram



Ground Reference Plane



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>https://www.sgs.com/en/Terms-and-Conditions</u>. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: <u>CN.Doccheck@ess.com</u>

or email: CN.Doccheck@sgs.com No.1 Workshop, M-10, Midde Section, Science & Technology Park, Nanstan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t

t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com Member of the SGS Group (SGS SA)



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 12 of 27

7.1.4 Measurement Procedure and Data

| | f∟(MHz) | f _н (MHz) | fc(MHz) | Limit (dBm) | Result |
|--------------|----------------|---|---|--|----------------|
| | 0.124376 | 0.125744 | 0.125000 | 0,119 MHz to 0,140 MHz | PASS |
| × | Ref 12 dBm | Att 50 di | *RBW 300 H *VBW 1 kHz B SWT 70 ms | z Marker 1 [T1] -10.79 d 125.000000000 2 | dBm kHz |
| | -10 | | | ndB [T1] 20.00 (BW 1.368000)00 (Temp 1 [T1 ndB] | dB kHz A |
| 1 PK VIEW | 10 | | | -30.59 (124.376000000 : Temp 2 [T1 ndB] -30.74 (| dBm |
| | 20 | 1 | T2 | 125.744000000 | kHz |
| | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | man man | |
| | 50 | | | | |
| | 60 | | | | _ |
| | 80 | | | | _ |
| | Center 125 kHz | | 600 Hz/ | Span 6 | kHz |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN. Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 13 of 27

7.2 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)

| Test Requirement | 47 CFR Part 15, Subpart C 15.207 |
|------------------|----------------------------------|
| Test Method: | ANSI C63.10 (2013) Section 6.2 |

Limit:

| Frequency of | Conducted limit(dBµV) | | |
|---|-----------------------|-----------|--|
| emission(MHz) | Quasi-peak | Average | |
| 0.15-0.5 | 66 to 56* | 56 to 46* | |
| 0.5-5 | 56 | 46 | |
| 5-30 | 60 | 50 | |
| *Decreases with the logarithm of the frequency. | | | |

7.2.1 E.U.T. Operation

| Operating Enviror | iment: | | | | | |
|-------------------|---------|-----------|-----------|-----------------------|------|------|
| Temperature: | 23.5 °C | Humidity: | 45.5 % RH | Atmospheric Pressure: | 1020 | mbar |

7.2.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---|
| Final test | 02 | TX mode(125KHz)_Keep the EUT in transmitting mode |

7.2.3 Test Setup Diagram





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 14 of 27

7.2.4 Measurement Procedure and Data

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50µH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@gss.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 15 of 27



Test Mode: 02: Line: Live line

: Shielding Room Site Condition: Line Job No. : 03145AT Test mode: 02

| | | | Cable | LISN | Read | | Limit | 0ver | | |
|----|---|---------|-------|--------|-------|-------|-------|--------|---------|--|
| | | Freq | Loss | Factor | Level | Level | Line | Limit | Remark | |
| | _ | MHz | dB | dB | dBuV | dBuV | dBuV | dB | | |
| 1 | * | 0.1532 | 0.06 | 9.88 | 35.42 | 45.36 | 65.82 | -20.46 | QP | |
| 2 | | 0.1532 | 0.06 | 9.88 | 19.87 | 29.81 | 55.82 | -26.01 | Average | |
| 3 | | 0.2139 | 0.06 | 9.94 | 24.77 | 34.77 | 63.05 | -28.28 | QP | |
| 4 | | 0.2139 | 0.06 | 9.94 | 6.56 | 16.56 | 53.05 | -36.49 | Average | |
| 5 | | 0.3303 | 0.07 | 10.02 | 23.95 | 34.04 | 59.44 | -25.40 | QP | |
| 6 | * | 0.3303 | 0.07 | 10.02 | 18.38 | 28.47 | 49.44 | -20.97 | Average | |
| 7 | | 1.2892 | 0.09 | 10.01 | 6.24 | 16.34 | 56.00 | -39.66 | QP | |
| 8 | | 1.2892 | 0.09 | 10.01 | -1.77 | 8.33 | 46.00 | -37.67 | Average | |
| 9 | | 3.9014 | 0.12 | 10.02 | 17.66 | 27.80 | 56.00 | -28.20 | QP | |
| 10 | | 3.9014 | 0.12 | 10.02 | 8.04 | 18.18 | 46.00 | -27.82 | Average | |
| 11 | | 13.5509 | 0.24 | 10.23 | 13.96 | 24.43 | 60.00 | -35.57 | QP | |
| 12 | | 13.5509 | 0.24 | 10.23 | 7.30 | 17.77 | 50.00 | -32.23 | Average | |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 16 of 27



Test Mode: 02: Line: Neutral Line

Site : Shielding Room Condition: Neutral Job No. : 03145AT Test mode: 02

| | | | Cable | LISN | Read | | Limit | 0ver | |
|----|---|---------|-------|--------|-------|-------|-------|--------|---------|
| | | Freq | Loss | Factor | Level | Level | Line | Limit | Remark |
| | - | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | * | 0.1557 | 0.06 | 9.89 | 34.04 | 43.99 | 65.69 | -21.70 | QP |
| 2 | | 0.1557 | 0.06 | 9.89 | 17.15 | 27.10 | 55.69 | -28.59 | Average |
| 3 | | 0.2029 | 0.06 | 9.92 | 24.69 | 34.67 | 63.49 | -28.82 | QP |
| 4 | | 0.2029 | 0.06 | 9.92 | 7.79 | 17.77 | 53.49 | -35.72 | Average |
| 5 | | 0.3183 | 0.07 | 9.91 | 23.32 | 33.30 | 59.75 | -26.45 | QP |
| 6 | * | 0.3183 | 0.07 | 9.91 | 15.01 | 24.99 | 49.75 | -24.76 | Average |
| 7 | | 1.4874 | 0.10 | 9.95 | 5.59 | 15.64 | 56.00 | -40.36 | QP |
| 8 | | 1.4874 | 0.10 | 9.95 | -1.06 | 8.99 | 46.00 | -37.01 | Average |
| 9 | | 4.0062 | 0.12 | 9.99 | 14.85 | 24.96 | 56.00 | -31.04 | QP |
| 10 | | 4.0062 | 0.12 | 9.99 | 4.79 | 14.90 | 46.00 | -31.10 | Average |
| 11 | | 13.5509 | 0.24 | 10.25 | 13.47 | 23.96 | 60.00 | -36.04 | QP |
| 12 | | 13.5509 | 0.24 | 10.25 | 7.28 | 17.77 | 50.00 | -32.23 | Average |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 17 of 27

7.3 Restricted Bands

| Test Requirement | 47 CFR Part 15, Subpart C 15.205 |
|------------------|-----------------------------------|
| Test Method: | ANSI C63.10 (2013) Section 6.10.5 |
| Limit: | |

The fundamental wave could not fall in the restricted band 90KHz-110KHz

7.3.1 E.U.T. Operation

Operating Environment:

| 1 0 | | | | | | |
|--------------|---------|-----------|-----------|-----------------------|------|------|
| Temperature: | 24.7 °C | Humidity: | 42.7 % RH | Atmospheric Pressure: | 1020 | mbar |

7.3.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---|
| Final test | 02 | TX mode(125KHz)_Keep the EUT in transmitting mode |

7.3.3 Test Setup Diagram



Ground Reference Plane



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>https://www.sgs.com/en/Terms-and-Conditions</u>. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CM.Doccheck@ess.com

or email: <u>CN.Doccheck@sgs.com</u> No.1 Workshop, M-10, Midde Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区MI-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 18 of 27

7.3.4 Measurement Procedure and Data





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 19 of 27

7.4 Radiated Emissions (9kHz-30MHz)

| Test Requirement | 47 CFR Part 15, Subpart C 15.205 & 15.209 |
|-----------------------|---|
| Test Method: | ANSI C63.10 (2013) Section 6.4 |
| Measurement Distance: | 3m |

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) | | | |
|--|----------------------------------|------------------------------|--|--|--|
| 0.009-0.490 | 2400/F(kHz) | 300 | | | |
| 0.490-1.705 | 24000/F(kHz) | 30 | | | |
| 1.705-30.0 | 30 | 30 | | | |
| Demoniu The environment limits about in the about table and becauter measurements and built in a | | | | | |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

If field strength is measured at only a single point, then that point shall be at the radial from the EUT that produces the maximum emission at the frequency being measured, as described in 5.4. If that point is closer to the EUT than $\lambda/2\pi$ and the limit distance is greater than $\lambda/2\pi$, the measurement shall be extrapolated to the limit distance by conservatively presuming that the field strength decreases at a 40 dB/decade of distance rate to the $\lambda/2\pi$ distance, and at a 20 dB/decade of distance rate beyond $\lambda/2\pi$. This shall be accomplished using Equation (2):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(near field)}/d_{(10m)}\} + 20\log\{d_{(30/300m)}/d_{(near field)}\}$$
(2)

If the single point measured is at a distance greater than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (3):

$$FS_{(10m)} = FS_{(30/300m)} + 20\log\{d_{(30/300m)}/d_{(10m)}\}$$
(3)

If both the single point and the limit distance are equal to or closer to the EUT than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (4):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(30/300m)}/d_{(10m)}\}$$
(4)

Remark:

 $d_{\text{near field}} = 47.77 / f_{\text{MHz}}$

where f_{MHz} is the frequency of the emission being measured in MHz.

7.4.1 E.U.T. Operation Operating Environment: Temperature: 23.6 °C Humidity: 51.5 % RH Atmospheric Pressure: 1020 mbar



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>https://www.sgs.com/en/Terms-and-Conditions</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction forcurents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. **Attention:** To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CN.Doccheck@ags.com
[Nu!Windbw.Mu!Mu@dow.Solew.Sheek & Behn@grAt, kenken District, Shenden, Guandong, Clima 518057] t (86-755) 26012053 f (86-755) 26710594] www.sgsgroup.com.cn
[Pist] · 广东 · 深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057] t (86-755) 26012053 f (86-755) 26710594] sgs.china@gs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 20 of 27

7.4.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---|
| Final test | 02 | TX mode(125KHz)_Keep the EUT in transmitting mode |

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

a. All radiated emission measurements in terms of magnetic field strength shall be performed with a shielded loop antenna.

b. For all radiated emission measurements in terms of magnetic field strength, the loop antenna were placed such that:

i. its centre shall be at 1.3 m height above the ground plane;

ii. the projection of its centre onto the ground plane shall be at the specified measurement distance from the projection on the ground plane of the closest point on the boundary of the equipment under test (EUT); and

iii. measurements shall be performed with the loop antenna placed vertically, in turn, in two polarizations (the measurement axis specified below is the line segment connecting the projections on the ground plane of the centre of the loop antenna and the centre of the EUT arrangement):

- · coaxial (loop plane perpendicular to the ground plane and to the measurement axis); and
- · coplanar (loop plane perpendicular to the ground plane and coplanar with the measurement axis).



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 21 of 27



Condition: 3m Job No. : 03145AT Test Mode: 02

| | | Read | Ant | Cable | Preamp | | Limit | 0ver | |
|------|-------|-------|--------|-------|--------|--------|--------|--------|---------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| | | | | | | | | | |
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| | | | | | | | | | |
| 1 | 0.009 | 64.62 | 18.88 | 0.31 | 31.32 | 52.49 | 128.35 | -75.86 | Average |
| 2 | 0.026 | 70.13 | 12.74 | 0.31 | 32.40 | 50.78 | 119.37 | -68.59 | Average |
| 3 pp | 0.125 | 94.26 | 10.45 | 0.29 | 32.50 | 72.50 | 105.66 | -33.16 | Average |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN. Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 22 of 27



Condition: 3m Job No. : 03145AT Test Mode: 02

| : Over |
|------------------|
| e Limit Remark |
| |
| n dB |
| |
| 5 -56.63 Average |
| 5-52.74 Average |
| -32.32 Average |
| |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN. Doccheck@egs.com

or email: <u>CN.Doccheck@sgs.com</u> No.1 Workshop, M-10, Midde Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 23 of 27

7.5 Radiated Emissions (30MHz-1GHz)

| Test Requirement | 47 CFR Part 15, Subpart C 15.205 & 15.209 |
|-----------------------|---|
| Test Method: | ANSI C63.10 (2013) Section 6.5 |
| Measurement Distance: | 10m |

Limit:

| Frequency(MHz) | Field strength(microvolts/meter) | Measurement distance(meters) | | | |
|--|----------------------------------|------------------------------|--|--|--|
| 30-88 | 100 | 3 | | | |
| 88-216 | 150 | 3 | | | |
| 216-960 | 200 | 3 | | | |
| Above 960 | 500 | 3 | | | |
| Remark: The emission limits shown in the above table are based on measurements employing a CISPR | | | | | |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector.

7.5.1 E.U.T. Operation

| Operating Environment: | | | | | | | | | | |
|------------------------|---------|-----------|-----------|-----------------------|------|------|--|--|--|--|
| Temperature: | 23.6 °C | Humidity: | 51.5 % RH | Atmospheric Pressure: | 1020 | mbar | | | | |

7.5.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|--------------------------|--------------|---|
| Final test | 02 | TX mode(125KHz)_Keep the EUT in transmitting mode |

7.5.3 Test Setup Diagram





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

or email: <u>CN.Doccheck@sgs.com</u> |No.1 Workshop, M-10, Midde Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn

win minimum, minimum down, downed a realining in minimum down down, downed a station of 18057 to (00-735) 20012050 for (00-735) 20710594 www.sgsglobele.com 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057 to (86-755) 26012053 for (86-755) 26710594 sgs.china@sgs.com



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 24 of 27

7.5.4 Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.

i. Repeat above procedures until all frequencies measured was complete.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.ggs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@ggs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 25 of 27

Test Mode: 02; Polarity: Horizontal



Condition: 10m HORIZONTAL Job No. : 03145AT Test Mode: 02

| | F ree | Read | Ant | Cable | Preamp | Level. | Limit | 0ver | Bamanla |
|------|--------------|-------|--------|-------|--------|--------|--------|--------|---------|
| | Freq | Level | Factor | LOSS | Factor | rever | Line | Limit | кемагк |
| - | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| 1 | 62.431 | 29.07 | 17.04 | 0.60 | 32.47 | 14.24 | 29.50 | -15.26 | QP |
| 2 | 129.923 | 29.97 | 16.25 | 0.90 | 32.40 | 14.72 | 33.00 | -18.28 | QP |
| 3 | 263.819 | 37.45 | 16.30 | 1.10 | 32.33 | 22.52 | 35.60 | -13.08 | QP |
| 4 | 537.589 | 36.97 | 22.64 | 1.70 | 32.34 | 28.97 | 35.60 | -6.63 | QP |
| 5 pp | 758.041 | 35.58 | 26.41 | 2.00 | 32.12 | 31.87 | 35.60 | -3.73 | QP |
| 6 | 903.309 | 33.16 | 27.41 | 2.10 | 31.39 | 31.28 | 35.60 | -4.32 | QP |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 26 of 27

Test Mode: 02; Polarity: Vertical



Condition: 10m VERTICAL Job No. : 03145AT Test Mode: 02

| | | Read | Ant | Cable | Preamp | | Limit | 0ver | |
|------|---------|-------|--------|-------|--------|--------|--------|--------|--------|
| | Freq | Level | Factor | Loss | Factor | Level | Line | Limit | Remark |
| _ | | | | | | | | | |
| | MHz | dBuV | dB/m | dB | dB | dBuV/m | dBuV/m | dB | |
| | | | | | | | | | |
| 1 | 36.001 | 40.19 | 16.64 | 0.40 | 32.50 | 24.73 | 29.50 | -4.77 | QP |
| 2 pp | 58.819 | 40.65 | 17.47 | 0.60 | 32.48 | 26.24 | 29.50 | -3.26 | QP |
| 3 | 64.659 | 41.21 | 16.83 | 0.60 | 32.46 | 26.18 | 29.50 | -3.32 | QP |
| 4 | 111.347 | 39.00 | 14.69 | 0.78 | 32.40 | 22.07 | 33.00 | -10.93 | QP |
| 5 | 426.521 | 32.69 | 20.47 | 1.50 | 32.30 | 22.36 | 35.60 | -13.24 | QP |
| 6 | 958.794 | 26.22 | 27.96 | 2.20 | 31.28 | 25.10 | 35.60 | -10.50 | QP |
| | | | | | | | | | |



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区M-10栋1号厂房 邮编:518057



SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240800314504 Page: 27 of 27

Test Setup Photo 8

Refer to Setup Photos for SZCR2408003145AT

EUT Constructional Details (EUT Photos) 9

Refer to External and Internal Photos for SZCR2408003145AT

- End of the Report -



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com/en/Terms-and-Conditions. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@egs.com

No.1 Workshop, N-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn 中国・广东・深圳市南山区科技园中区MI-10栋1号厂房 邮编:518057 t(86-755)26012053 f(86-755)26710594 sgs.china@sgs.com