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TEST REPORT

| Application No.: | HR/2019/10002 |
|---------------------------|--|
| Applicant: | Huawei Technologies Co., Ltd. |
| Address of Applicant: | Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C |
| Manufacturer: | Huawei Technologies Co., Ltd. |
| Address of Manufacturer: | Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C |
| Factory: | Huawei Technologies Co., Ltd. |
| Address of Factory: | Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C |
| Equipment Under Test (EUT |): |
| EUT Name: | Smart Phone |
| Model No.: | VOG-L04 |
| Trade mark: | HUAWEI |
| FCC ID: | QISVOG-L04 |
| Standard(s) : | 47 CFR Part 18 |
| Date of Receipt: | 2019-01-02 |
| Date of Test: | 2019-01-09 to 2019-01-10 |
| Date of Issue: | 2019-01-15 |
| Test Result: | Pass* |

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

Ceny. Xu

Keny Xu EMC Laboratory Manager



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| Revision Record | | | | | |
|-----------------|---------|------------|----------|----------|--|
| Version | Chapter | Date | Modifier | Remark | |
| 01 | | 2019-01-15 | | Original | |
| | | | | | |
| | | | | | |

| Authorized for issue by: | | |
|--------------------------|---------------------------|--|
| | later | |
| | Leo Lai /Project Engineer | |
| | EvicFu | |
| | Eric Fu /Reviewer | |



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2 **Test Summary**

| Radio Spectrum Matter Part | | | | | |
|----------------------------|----------------|----------|-------------|--------|--|
| Item | Standard | Method | Requirement | Result | |
| Conducted disturbance | 47 CFR Part 18 | FCC MP-5 | Part 18.307 | Pass | |
| Radiated emission | 47 CFR Part 18 | FCC MP-5 | Part 18.305 | Pass | |



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General Information 4

4.1 Details of E.U.T.

| Power supply: | DC 3.82V from internal battery or AC/DC adapter | |
|----------------------|---|--|
| Antenna Type: | Loop Antenna | |
| Modulation Type: | Load Modulation | |
| Operation Frequency: | 110kHz-148kHz | |

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Specification |
|-------------|--------------|-------------|----------------|
| Smart Phone | Huawei | VOG-L04 | |
| Adapter | Huawei | HW-05045U00 | |
| USB Cable | Huawei | WA0009 | 100cm shielded |

4.3 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|---------------------------------|---------------------------|
| 1 | Radio Frequency | ± 7.25 x 10 ⁻⁸ |
| 2 | Duty cycle | ± 0.37% |
| 3 | Occupied Bandwidth | ± 3% |
| 4 | RF conducted power | ± 0.75dB |
| 5 | RF power density | ± 2.84dB |
| 6 | Conducted Spurious emissions | ± 0.75dB |
| 7 | DE Dedicted power | ± 4.5dB (below 1GHz) |
| / | RF Radiated power | ± 4.8dB (above 1GHz) |
| 8 | Dedicted Courieus emission test | ± 4.5dB (Below 1GHz) |
| 0 | Radiated Spurious emission test | ± 4.8dB (Above 1GHz) |
| 9 | Temperature test | ± 1 ℃ |
| 10 | Humidity test | ± 3% |
| 11 | Supply voltages | ± 1.5% |
| 12 | Time | ± 3% |



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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, 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:

CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC

Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

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

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. 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: CN1178

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

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



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Equipment List 5

| Conducted disturbance | | | | | |
|-----------------------|-------------------|---------------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| Shielding Room | ChangZhou ZhongYu | GB-88 | SEM001-06 | 2017-05-10 | 2020-05-09 |
| Measurement Software | AUDIX | e3 V5.4.1221d | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM024-01 | 2018-07-12 | 2019-07-11 |
| LISN | Rohde & Schwarz | ENV216 | SEM007-01 | 2018-09-25 | 2019-09-24 |
| LISN | ETS-LINDGREN | 3816/2 | SEM007-02 | 2018-04-02 | 2019-04-01 |
| EMI Test Receiver | Rohde & Schwarz | ESCI | SEM004-02 | 2018-04-02 | 2019-04-01 |

| Radiated emission | | | | | |
|--|-------------------------|---------------------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| 10m Semi-Anechoic Chamber | SAEMC | FSAC1018 | SEM001-03 | 2018-03-31 | 2021-03-30 |
| Measurement Software | AUDIX | e3 V8.2014-6- 27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM029-01 | 2018-07-12 | 2019-07-11 |
| EMI Test Receiver (9kHz-7GHz) | Rohde & Schwarz | ESR | SEM004-03 | 2018-04-02 | 2019-04-01 |
| Trilog-Broadband Antenna 30MHz-1GHz) | Schwarzbeck | VULB9168 | SEM003-18 | 2016-06-29 | 2019-06-28 |
| Pre-amplifier | Sonoma Instrument Co | 310N | SEM005-04 | 2018-04-13 | 2019-04-12 |
| Active Loop Antenna | ETS-Lindgren | 6502 | SEM003-08 | 2017-08-22 | 2020-08-21 |

| General used equipment | | | | | |
|------------------------------------|---|----------|--------------|------------|--------------|
| Equipment | Manufacturer | Model No | Inventory No | Cal Date | Cal Due Date |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-03 | 2018-09-27 | 2019-09-26 |
| Humidity/ Temperature Indicator | Shanghai Meteorological Industry Factory | ZJ1-2B | SEM002-04 | 2018-09-27 | 2019-09-26 |
| Humidity/ Temperature Indicator | Mingle | N/A | SEM002-08 | 2018-09-27 | 2019-09-26 |
| Barometer | Changchun Meteorological Industry Factory | DYM3 | SEM002-01 | 2018-04-08 | 2019-04-07 |



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6 Radio Spectrum Matter Test Results

6.1 Conducted disturbance

| Test Requirement | Part 18.307 |
|------------------|-------------|
| Test Method: | FCC MP-5 |
| Limit: | |

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

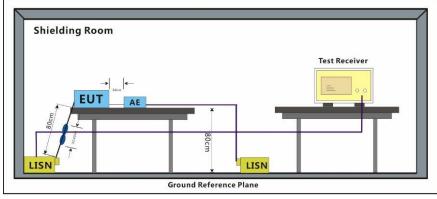
*Decreases with the logarithm of the frequency.

6.1.1 E.U.T. Operation

Operating Environment:

| Temperature: | 21.7 °C | Humidity: | 57.5 % RH | Atmospheric Pressure: | 1000 | mbar |
|--------------|---------------|-------------|-----------------|-----------------------|------|------|
| Test mode | e: Charge mod | le_Keep the | EUT in charging | and reverse charging | | |

6.1.2 Test Setup Diagram



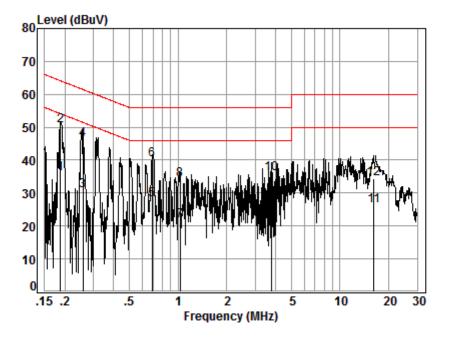
6.1.3 Measurement Procedure and Data





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Mode:e; Line:Live Line



| Site : | Shielding | Room |
|------------|-----------|------|
| Condition: | Line | |
| Job No. : | 10002 | |
| Test mode: | e | |

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|----|-------|---------------|----------------|---------------|-------|---------------|---------------|---------|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.19 | 0.02 | 9.66 | 26.06 | 35.74 | 54.11 | -18.37 | Average |
| 2 | 0.19 | 0.02 | 9.66 | 40.71 | 50.39 | 64.11 | -13.72 | QP |
| 3 | 0.26 | 0.03 | 9.67 | 21.06 | 30.76 | 51.47 | -20.71 | Average |
| 4 | 0.26 | 0.03 | 9.67 | 36.54 | 46.24 | 61.47 | -15.23 | QP |
| 5 | 0.69 | 0.07 | 9.68 | 18.38 | 28.13 | 46.00 | -17.87 | Average |
| 6 | 0.69 | 0.07 | 9.68 | 30.45 | 40.20 | 56.00 | -15.80 | QP |
| 7 | 1.03 | 0.09 | 9.74 | 11.66 | 21.49 | 46.00 | -24.51 | Average |
| 8 | 1.03 | 0.09 | 9.74 | 24.32 | 34.15 | 56.00 | -21.85 | QP |
| 9 | 3.78 | 0.16 | 9.72 | 18.65 | 28.53 | 46.00 | -17.47 | Average |
| 10 | 3.78 | 0.16 | 9.72 | 26.06 | 35.94 | 56.00 | -20.06 | QP |
| 11 | 16.14 | 0.22 | 10.28 | 15.72 | 26.22 | 50.00 | -23.78 | Average |
| 12 | 16.14 | 0.22 | 10.28 | 23.86 | 34.36 | 60.00 | -25.64 | QP |



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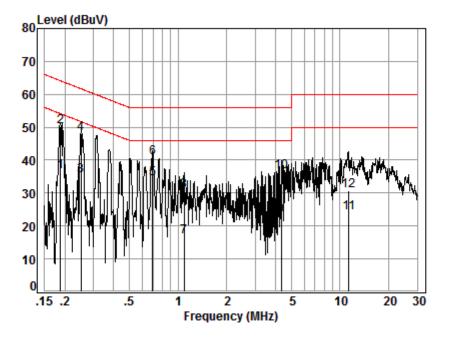
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Mode:e; Line:Neutral Line



Site : Shielding Room Condition: Neutral : 10002 Job No. Test mode: e

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|----|-------|---------------|----------------|---------------|-------|---------------|---------------|---------|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.19 | 0.02 | 9.64 | 26.74 | 36.40 | 54.15 | -17.75 | Average |
| 2 | 0.19 | 0.02 | 9.64 | 40.52 | 50.18 | 64.15 | -13.97 | QP |
| 3 | 0.25 | 0.03 | 9.64 | 25.66 | 35.33 | 51.69 | -16.36 | Average |
| 4 | 0.25 | 0.03 | 9.64 | 38.40 | 48.07 | 61.69 | -13.62 | QP |
| 5 | 0.70 | 0.07 | 9.65 | 24.74 | 34.46 | 46.00 | -11.54 | Average |
| 6 | 0.70 | 0.07 | 9.65 | 31.10 | 40.82 | 56.00 | -15.18 | QP |
| 7 | 1.09 | 0.10 | 9.71 | 6.83 | 16.64 | 46.00 | -29.36 | Average |
| 8 | 1.09 | 0.10 | 9.71 | 20.85 | 30.66 | 56.00 | -25.34 | QP |
| 9 | 4.34 | 0.16 | 9.70 | 13.12 | 22.98 | 46.00 | -23.02 | Average |
| 10 | 4.34 | 0.16 | 9.70 | 26.58 | 36.44 | 56.00 | -19.56 | QP |
| 11 | 11.38 | 0.18 | 10.01 | 13.98 | 24.17 | 50.00 | -25.83 | Average |
| 12 | 11.38 | 0.18 | 10.01 | 20.54 | 30.73 | 60.00 | -29.27 | QP |



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6.2 Radiated emission

Test RequirementPart 18.305Test Method:FCC MP-5Measurement Distance:3mLimit:

(b) The field strength levels of emissions which lie outside the bands specified in §18.301, unless otherwise indicated, shall not exceed the following:

| Equipment | Operating frequency | RF Power generated by equipment (watts) | Field strength limit (uV/m) | Distance (meters) |
|--|--|--|--|------------------------------------|
| Any type unless otherwise specified (miscellaneous) | Any ISM frequency | Below 500 500 or more | 25 25 × SQRT(power/500) | 300 ¹ 300 |
| | Any non-ISM frequency | Below 500 500 or more | 15 15 × SQRT(power/500) | 300 ¹ 300 |
| Industrial heaters and RF stabilized arc welders | On or below 5,725 MHz Above 5,725 MHz | Any Any | 10 (²) | 1,600 (²) |
| Medical diathermy | Any ISM frequency Any non-ISM frequency | Any Any | 25 15 | 300 300 |
| Ultrasonic | Below 490 kHz | Below 500 500 or more | 2,400/F(kHz) 2,400/F(kHz) × SQRT (power/500) | 300 ³ 300 |
| | 490 to 1,600 kHz Above 1,600 kHz | | 24,000/F(kHz) 15 | 30 30 |
| Induction cooking ranges | Below 90 kHz On or above 90 kHz | Any Any | 1,500 300 | ⁴ 30 ⁴ 30 |

¹Field strength may not exceed 10 μ V/m at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

²Reduced to the greatest extent possible.

 3 Field strength may not exceed 10 μ V/m at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.

⁴Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.



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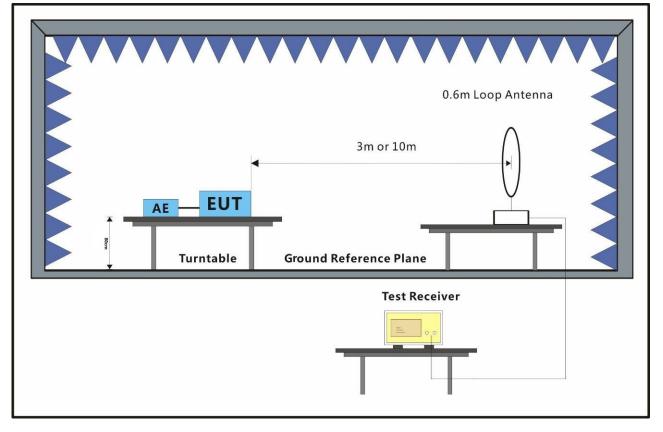
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6.2.1 E.U.T. Operation

Operating Environment:

| Temperature: | 25 | °C | Humidity: | 51 | % RH | Atmospheric Pressure: | 1030 | mbar |
|---|---|------------|-------------|--------|--------------|-----------------------|------|------|
| Pretest these modes to find the worst case: | f: Charge mode_Keep the EUT in reverse charging | | | | | | | |
| The worst case for final test: Test Mode: | f: Cł | narge mode | _Keep the I | EUT ii | n reverse ch | arging | | |
| | | | | | | | | |

6.2.2 Test Setup Diagram







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6.2.3 Measurement Procedure and Data

Test Procedure:

- The EUT was placed on the top of a rotating table 0.8 meters above the a. ground at a 10 meter semi-anechoic chamber(30MHz-1000MHz) and 10 meter semi-anechoic chamber(9kHz-30MHz). The table was rotated 360 degrees to determine the position of the highest radiation.
 - The EUT was set 10 meters(30MHz-1000MHz) and 10 meter (9kHz-30MHz) b. away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
 - Above 30MHz: The Analyzer/Receiver scanned from 30MHz to 1000MHz.The C. 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. Below 30MHz: The Analyzer/Receiver scanned from 9kHz to 30MHz.The antenna height is 2 meters above the ground to determine the maximum value of the field strength.
 - For each suspected emission, the EUT was arranged to its worst case and e. 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 2 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
 - The test-receiver system was set to Peak Detect Function and Specified f. Bandwidth with Maximum Hold Mode.
 - If the emission level of the EUT in peak mode was 10dB lower than the limit a. 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.
 - h. Repeat above procedures until all frequencies measured was complete.
 - Measurement Requirement: i

1)This product belongs to non-ISM equipment, the field strength limit is 15uV/m at 300 meter distance.

2)Limit: 20log(15uV/m) +20log (300/3) =23.52+40=63.52dBuV/m at 3 meters distance



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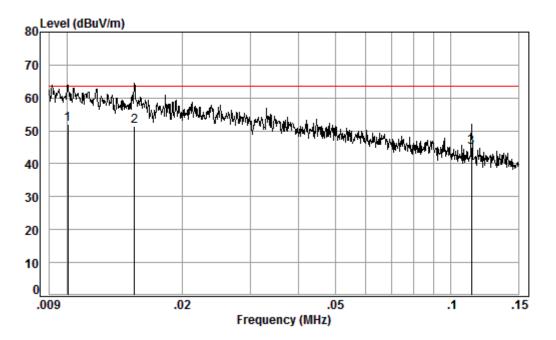
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Mode f: 9kHz-150kHz



Condition: 3m Job No. : 10002 Test Mode: f

| | Freq | | | Preamp Factor | | | | | Remark |
|----------------|------|------|-------|------------------|-------|--------|--------|--------|-------------------------------|
| _ | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| 1 pp 2 3 | 0.01 | 0.25 | 16.79 | 31.62 | 65.92 | 51.34 | 63.52 | -12.18 | Average Average Average |



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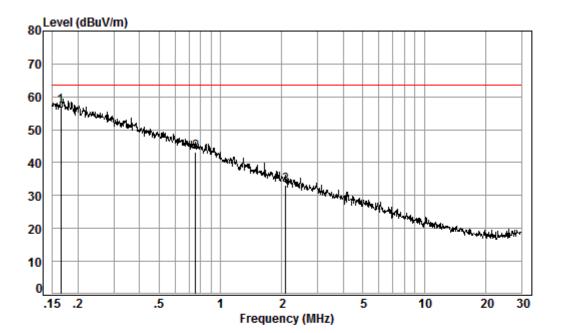
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Mode f: 150kHz-30MHz



Condition: 3m Job No. : 10002 Test Mode: f

| | | Cable | Ant | Preamp | Read | | Limit | 0ver | |
|------|------|-------|--------|--------|-------|--------|--------|--------|---------|
| | Freq | Loss | Factor | Factor | Level | Level | Line | Limit | Remark |
| - | | | | | | | | | |
| | MHz | dB | dB/m | dB | dBuV | dBuV/m | dBuV/m | dB | |
| | | | | | | | | | |
| 1 pp | 0.17 | 0.07 | 11.76 | 32.67 | 77.96 | 57.12 | 63.52 | -6.40 | Average |
| 2 | 0.75 | 0.18 | 12.00 | 32.65 | 63.65 | 43.18 | 63.52 | -20.34 | Average |
| 3 | 2.09 | 0.34 | 12.11 | 32.65 | 53.29 | 33.09 | 63.52 | -30.43 | Average |
| | | | | | | | | | - |



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Photographs 7

7.1 Test Setup

Please refer to setup photos.

7.2 EUT Constructional Details (EUT Photos) Please refer to external and internal photos for details.

- End of the Report -



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