

SPECTRUM REPORT

(GSM)

Applicant: Shenzhen Huafurui Technology Co., Ltd.
Address of Applicant: Unit 1401 & 1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen, P. R. China

Equipment Under Test (EUT)

Product Name: Smart phone

Model No.: GT20

Trade mark: HAFURY

Applicable standards: ETSI EN 301 511 V12.5.1 (2017-03)

Date of sample receipt: 22 May, 2020

Date of Test: 23 May, to 15 Jun., 2020

Date of report issue: 13 Jul., 2020

Test Result: PASS*

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

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The protection requirements with respect to electromagnetic compatibility contained in Directive 2014/53/EU are considered.



Bruce Zhang
Laboratory Manager



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

| Version No. | Date | Description |
|-------------|---------------|-------------|
| 00 | 13 Jul., 2020 | Original |
| | | |
| | | |
| | | |

Remark:
This report was revised by CCISE200507406 report, which was released and tested by Shenzhen Zhongjian Nanfang Testing Co., Ltd. The differences between them as below: Update model, trademark and software version. So no needs to be retested.

Tested by:

Yao Wu

Test Engineer

Date:

13 Jul., 2020

Reviewed by:

Winner Zhang

Project Engineer

Date:

13 Jul., 2020

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4 Test Summary

| Clauses | Description of Test | Result |
|---------------|---|--------|
| Clause 4.2.1 | Transmitter – Frequency error and phase error | PASS |
| Clause 4.2.2 | Transmitter – Frequency error under multi path and interference conditions | PASS |
| Clause 4.2.3 | Transmitter – Frequency error and Phase Error in HSCSD Multi slot Configuration | N/A |
| Clause 4.2.4 | Frequency error and phase error in GPRS multi slot configuration | PASS |
| Clause 4.2.5 | Transmitter output power and burst timing | PASS |
| Clause 4.2.6 | Transmitter – Output RF spectrum | PASS |
| Clause 4.2.7 | Transmitter output power and burst timing in HSCSD multi slot configuration | N/A |
| Clause 4.2.8 | Transmitter – Output RF spectrum in HSCSD multi slot configuration | N/A |
| Clause 4.2.9 | Transmitter – Output RF spectrum for MS supporting the R-GSM or ER-GSM frequency band | N/A |
| Clause 4.2.10 | Transmitter output power in GPRS multi slot configuration | PASS |
| Clause 4.2.11 | Output RF spectrum in GPRS multi slot configuration | PASS |
| Clause 4.2.12 | Conducted spurious emissions – MS allocated a channel | PASS |
| Clause 4.2.13 | Conducted spurious emission – MS in idle mode | PASS |
| Clause 4.2.14 | Conducted spurious emissions for MS supporting the R-GSM or ER-GSM frequency band – MS allocated a channel | N/A |
| Clause 4.2.15 | Conducted spurious emissions for MS supporting the R-GSM or ER-GSM frequency band – MS in idle mode | N/A |
| Clause 4.2.16 | Radiated spurious emissions – MS allocated a channel | PASS |
| Clause 4.2.17 | Radiated spurious emissions – MS in idle mode | PASS |
| Clause 4.2.18 | Radiated spurious emissions for MS supporting the R-GSM or ER-GSM frequency band – MS allocated a channel | N/A |
| Clause 4.2.19 | Radiated spurious emissions for MS supporting the R-GSM or ER-GSM frequency band – MS in idle mode | N/A |
| Clause 4.2.20 | Receiver blocking and spurious responses – speech channels | PASS |
| Clause 4.2.21 | Receiver blocking and spurious response – speech channels for MS supporting the R-GSM or ER-GSM frequency band | N/A |
| Clause 4.2.22 | Improved Receiver Blocking and spurious response - speech channels for 8W MS supporting the R-GSM or ER-GSM frequency band | N/A |
| Clause 4.2.23 | Improved Receiver Blocking and spurious response – speech channels for 2W MS supporting the R-GSM or ER-GSM frequency band | N/A |
| Clause 4.2.24 | Improved Receiver Blocking and spurious response – control channels for 8W MS supporting the R-GSM or ER-GSM frequency band not supporting speech | N/A |
| Clause 4.2.25 | Improved Receiver Blocking and spurious response – control channels for 2W MS supporting the R-GSM or ER-GSM frequency band not supporting speech | N/A |
| Clause 4.2.26 | Frequency error and Modulation accuracy in EGPRS Configuration | PASS |
| Clause 4.2.27 | Frequency error under multipath and interference conditions in EGPRS Configuration | PASS |
| Clause 4.2.28 | EGPRS Transmitter output power | PASS |

| | | |
|---|---|------|
| Clause 4.2.29 | Output RF spectrum in EGPRS configuration | PASS |
| Clause 4.2.30 | Blocking and spurious response in EGPRS configuration | PASS |
| Clause 4.2.31 | Blocking and spurious response in DLMT configuration | N/A |
| Clause 4.2.32 | Intermodulation rejection - speech channels | PASS |
| Clause 4.2.33 | Intermodulation rejection - control channels | N/A |
| Clause 4.2.34 | Intermodulation rejection - EGPRS | PASS |
| Clause 4.2.35 | AM suppression - speech channels | PASS |
| Clause 4.2.36 | AM suppression - control channels | N/A |
| Clause 4.2.37 | AM suppression - packet channels | N/A |
| Clause 4.2.38 | Adjacent channel rejection - speech channels (TCH/FS) | PASS |
| Clause 4.2.39 | Adjacent channel rejection - control channels | N/A |
| Clause 4.2.40 | Adjacent channel rejection - EGPRS | PASS |
| Clause 4.2.41 | Adjacent channel rejection in DLMT configuration | N/A |
| Clause 4.2.42 | Reference sensitivity - TCH/FS | PASS |
| Clause 4.2.43 | Reference sensitivity - FACCH/F | PASS |
| Clause 4.2.44 | Minimum Input level for Reference Performance - GPRS | PASS |
| Clause 4.2.45 | Minimum Input level for Reference Performance - EGPRS | PASS |
| Clause 4.2.46 | Reference sensitivity - TCH/FS for MS supporting the R-GSM or ER-GSM band | N/A |
| <i>Remark:</i> <i>Pass: Meet the requirement.</i> <i>N/A: Not Applicable.</i> | | |

5 General Information

5.1 Client Information

| | |
|------------------------|---|
| Applicant: | Shenzhen Huafurui Technology Co., Ltd. |
| Address: | Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen, P. R. China |
| Manufacturer/ Factory: | Shenzhen Huafurui Technology Co., Ltd. |
| Address: | Unit 1401 &1402, 14/F, Jinqi zhigu mansion (No. 4 building of Chongwen Garden), Crossing of the Liuxian street and Tangling road, Taoyuan street, Nanshan district, Shenzhen, P. R. China |

5.2 General Description of E.U.T.

| | | |
|---------------------------|---|--|
| Product Name: | Smart phone | |
| Model No.: | GT20 | |
| Hardware version: | V965_MB_V2.0_20200415 | |
| Software version: | HAFURY_GT20_A031CH_V01_20200715 | |
| GPRS class | 12 | |
| EGPRS class | 12 | |
| Modulation technology | <input checked="" type="checkbox"/> GSM | <input checked="" type="checkbox"/> GMSK |
| | <input checked="" type="checkbox"/> GPRS: | <input checked="" type="checkbox"/> GMSK (CS1 ~ CS4) <input checked="" type="checkbox"/> Uplink <input checked="" type="checkbox"/> Downlink |
| | <input checked="" type="checkbox"/> EGPRS | <input type="checkbox"/> GMSK (MCS1 ~ MCS5) <input type="checkbox"/> Uplink <input type="checkbox"/> Downlink |
| | | <input checked="" type="checkbox"/> 8PSK (MCS6 ~ MCS9) <input checked="" type="checkbox"/> Uplink <input checked="" type="checkbox"/> Downlink |
| Operating frequency bands | E-GSM900 | Tx: 880---915MHz |
| | | Rx: 925---960 MHz |
| | DCS1800 | Tx: 1710---1785 MHz |
| | | Rx: 1805---1880 MHz |
| Antenna Type: | Internal Antenna | |
| Antenna Gain: | E-GSM900: -1.9 dBi (declare by Applicant) DCS1800: -1.7 dBi (declare by Applicant) | |
| Power supply: | Rechargeable Li-ion polymer Battery DC3.85V/4200mAh | |
| AC adapter: | Model No.:HJ-0502000W2-EU Input: AC100-240V, 50/60Hz 0.3A Output: DC 5.0V, 2.0A | |

5.3 Test environment and mode

| Operating Environment: | |
|--|---|
| Temperature: | Normal: 15°C ~ 35°C, Extreme: -20°C ~ +55°C |
| Humidity: | 20 % ~ 75 % RH |
| Atmospheric Pressure: | 1008 mbar |
| Voltage: | Nominal: 3.85Vdc, Extreme: Low 3.5Vdc, High 4.40Vdc |
| Test mode: | |
| GSM mode | Keep the EUT communication with simulated station in GSM Voice mode |
| GPRS mode | Keep the EUT communication with simulated station in GPRS mode |
| EGPRS mode | Keep the EUT communication with simulated station in EGPRS mode |
| Note: 1. All the test environments and test modes required following ETSI TS 151 010-1 and 3GPP TS 05.05. 2. During the test, pre-scan SIM 1 and SIM 2, found SIM 1 was worse case. The report only reflects the worst case. | |

5.4 Description of Support Units

| Test Equipment | Manufacturer | Model No. | Serial No. |
|-------------------|-----------------|-----------|------------|
| Simulated Station | Anritsu | MT8820C | 6201026545 |
| Simulated Station | Rohde & Schwarz | CMU200 | 122477 |

5.5 Measurement Uncertainty

| Parameter | Expanded Uncertainty (Confidence of 95%) |
|-------------------------------------|--|
| Radio Frequency | $\pm 1.2 \times 10^{-9}$ |
| RF Power, Conducted | ± 0.64 dB |
| Spurious emission, Conducted | ± 1.18 dB |
| Temperature | ± 0.3 °C |
| Voltage | ± 0.1 % |
| Humidity | ± 2 % |
| Time | ± 10 % |
| Radiated Emission (30MHz ~ 1000MHz) | ± 4.32 dB |
| Radiated Emission (1GHz ~ 18GHz) | ± 5.16 dB |

5.6 Laboratory Facility

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

● **FCC - Designation No.: CN1211**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

5.7 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
 Address: No.110~116, Building B, Jinyuan Business Building, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China
 Tel: +86-755-23118282, Fax: +86-755-23116366
 Email: info@ccis-cb.com, Website: <http://www.ccis-cb.com>

5.8 Test Instruments list

| Radiated Emission: | | | | | |
|--------------------|-----------------|---------------|--------------------|----------------------|--------------------------|
| Test Equipment | Manufacturer | Model No. | Serial No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| 3m SAC | SAEMC | 9m*6m*6m | 966 | 07-22-2017 | 07-21-2020 |
| BiConiLog Antenna | SCHWARZBECK | VULB9163 | 497 | 03-18-2020 | 03-17-2021 |
| Biconical Antenna | SCHWARZBECK | VUBA9117 | 359 | 06-22-2017 | 06-21-2020 |
| Horn Antenna | SCHWARZBECK | BBHA9120D | 916 | 03-07-2020 | 03-06-2021 |
| Horn Antenna | SCHWARZBECK | BBHA9120D | 1805 | 06-22-2017 | 06-21-2020 |
| EMI Test Software | AUDIX | E3 | Version: 6.110919b | | |
| Pre-amplifier | HP | 8447D | 2944A09358 | 03-07-2020 | 03-06-2021 |
| Pre-amplifier | CD | PAP-1G18 | 11804 | 03-07-2020 | 03-06-2021 |
| Spectrum analyzer | Rohde & Schwarz | FSP30 | 101454 | 03-05-2020 | 03-04-2021 |
| EMI Test Receiver | Rohde & Schwarz | ESRP7 | 101070 | 03-05-2020 | 03-04-2021 |
| Signal Generator | Rohde & Schwarz | SMX | 835454/016 | 03-05-2020 | 03-04-2021 |
| Signal Generator | Rohde & Schwarz | SMR20 | 1008100050 | 03-05-2020 | 03-04-2021 |
| Cable | ZDECL | Z108-NJ-NJ-81 | 1608458 | 03-07-2020 | 03-06-2021 |
| Cable | MICRO-COAX | MFR64639 | K10742-5 | 03-07-2020 | 03-06-2021 |
| Cable | SUHNER | SUCOFLEX100 | 58193/4PE | 03-07-2020 | 03-06-2021 |
| RF Switch Unit | MWRFTTEST | MW200 | N/A | N/A | N/A |
| Test Software | MWRFTTEST | MTS8200 | Version: 2.0.0.0 | | |

| Conducted method: | | | | | |
|------------------------------|-----------------|------------|------------------|----------------------|--------------------------|
| Test Equipment | Manufacturer | Model No. | Serial No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) |
| Spectrum Analyzer | Agilent | N9020A | MY50510123 | 11-18-2019 | 11-17-2020 |
| Vector Signal Generator | Agilent | N5182A | MY49060014 | 11-18-2019 | 11-17-2020 |
| Signal Generator | Rohde & Schwarz | SMR20 | 1008100050 | 03-05-2020 | 03-04-2021 |
| Simulated Station | Rohde & Schwarz | CMW500 | 140493 | 07-22-2019 | 07-21-2020 |
| RF Switch Unit | MWRFTTEST | MW200 | N/A | N/A | N/A |
| Test Software | MWRFTTEST | MTS8200 | Version: 2.0.0.0 | | |
| DC Power Supply | XinNuoEr | WYK-10020K | 1409050110020 | 09-25-2019 | 09-24-2020 |
| Temperature Humidity Chamber | HengPu | HPGDS-500 | 20140828008 | 11-01-2019 | 10-31-2020 |

6 Radio Requirements Specification in ETSI EN 301 511

6.1 Justification

The EUT and test equipment were configured for testing according to ETSI EN 301 511 V12.5.1 (2017-03) and ETSI TS 151 010-1.

The EUT was tested in the normal operating mode to represent worst-case results during the final qualification test.

The EUT was tested with a dummy battery.

6.2 Test Configuration of EUT

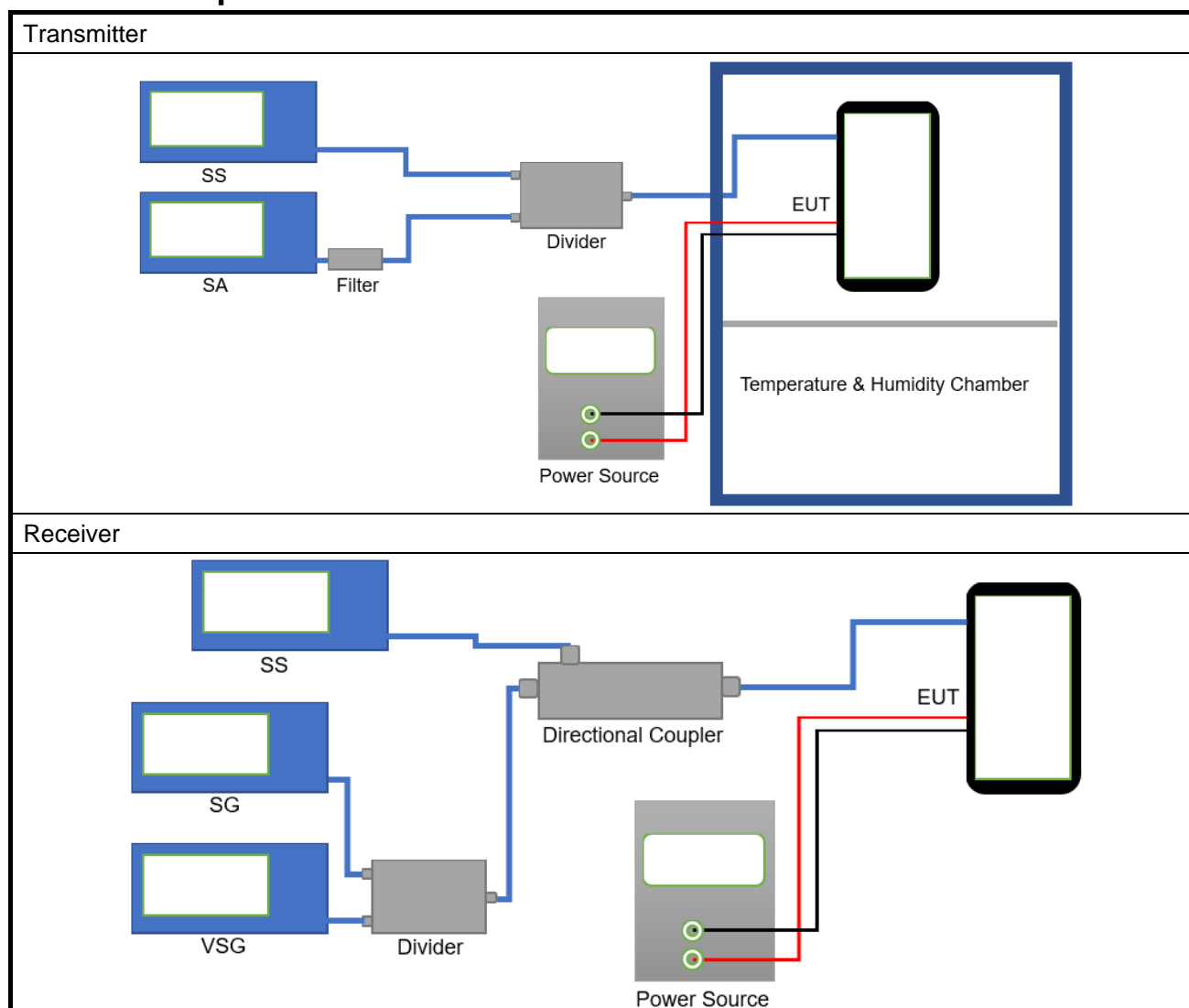
| EGSM 900 | | | DCS 1800 | | |
|----------------|-----|-----------------|----------------|-----|-----------------|
| Channel Number | | Frequency (MHz) | Channel Number | | Frequency (MHz) |
| Low channel | 975 | 880.2 | Low channel | 512 | 1710.2 |
| Middle channel | 60 | 902.0 | Middle channel | 700 | 1747.8 |
| High channel | 124 | 914.8 | High channel | 885 | 1784.8 |

| Clause No. | Test Conditions | | | | | | Test Channel | | | Modulation | | Uplink Slot Allocation | |
|------------|-----------------|------|------|------|------|------|--------------|--------|------|------------|------|------------------------|---------|
| | NTNV | LTLV | LTHV | HTLV | HTHV | Vib. | Low | Middle | High | GMSK | 8PSK | 1 slot | 4 slots |
| 4.2.1 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | √ | |
| 4.2.2 | √ | √ | √ | √ | √ | | √ | √ | √ | √ | | √ | |
| 4.2.4 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | √ |
| 4.2.5 | √ | √ | √ | √ | √ | | √ | √ | √ | √ | | √ | |
| 4.2.6 | √ | √ | √ | √ | √ | | √ | √ | √ | √ | | √ | |
| 4.2.10 | √ | √ | √ | √ | √ | | √ | √ | √ | √ | | | √ |
| 4.2.11 | √ | √ | √ | √ | √ | | √ | √ | √ | √ | | | √ |
| 4.2.12 | √ | √ | √ | | | | | √ | | √ | | √ | |
| 4.2.13 | √ | √ | √ | | | | | √ | | √ | | √ | |
| 4.2.16 | √ | √ | √ | | | | | √ | | √ | | √ | |
| 4.2.17 | √ | √ | √ | | | | | √ | | √ | | √ | |
| 4.2.20 | √ | | | | | | | √ | | √ | | √ | |
| 4.2.26 | √ | √ | √ | √ | √ | | √ | √ | √ | | √ | | √ |
| 4.2.27 | √ | √ | √ | √ | √ | | √ | √ | √ | | √ | | √ |
| 4.2.28 | √ | √ | √ | √ | √ | | √ | √ | √ | | √ | | √ |
| 4.2.29 | √ | √ | √ | √ | √ | | √ | √ | √ | | √ | | √ |
| 4.2.30 | √ | | | | | | | √ | | | √ | | √ |
| 4.2.32 | √ | | | | | | | √ | | √ | | √ | |
| 4.2.34 | √ | | | | | | | √ | | | √ | | √ |
| 4.2.35 | √ | | | | | | | √ | | √ | | √ | |
| 4.2.38 | √ | | | | | | | √ | | √ | | √ | |
| 4.2.40 | √ | | | | | | | √ | | | √ | | √ |
| 4.2.42 | √ | | | | | | | √ | | √ | | √ | |
| 4.2.43 | √ | | | | | | | √ | | √ | | √ | |
| 4.2.44 | √ | | | | | | | √ | | √ | | √ | |
| 4.2.45 | √ | | | | | | | √ | | | √ | | √ |

Note:

1. "√" means that this configuration is chosen for test.
2. "NTNV" means Normal Temperature Normal Voltage, "LTLV" means Low Temperature Low Voltage, "LTHV" means Low Temperature High Voltage, "HTLV" means High Temperature Low Voltage, "HTHV" means High Temperature High Voltage. "Vib." means Vibration.

6.3 Test Setup Block



6.4 Test Results

6.4.1 Test Result Summary

| Clause No. | Test Mode | Test Condition | Test Band | |
|------------|-----------|----------------|------------------------------|---------|
| | | | GSM900, DCS1800 | |
| | | | Test Data | Verdict |
| 4.2.1 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| | | Vib. | Appendix F - GSM - Vibration | Pass |
| 4.2.2 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.4 | GPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| | | Vib. | Appendix F - GSM - Vibration | Pass |
| 4.2.5 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.6 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.10 | GPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.11 | GPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.12 | GSM | NV | Appendix A - GSM - NTVN | Pass |
| | | LV | Appendix B - GSM - LTLV | Pass |
| | | HV | Appendix C - GSM - LTHV | Pass |
| 4.2.13 | GSM | NV | Appendix A - GSM - NTVN | Pass |
| | | LV | Appendix B - GSM - LTLV | Pass |
| | | HV | Appendix C - GSM - LTHV | Pass |
| 4.2.16 | GSM | NV | See Section 6.4.2 | Pass |
| | | LV | See Section 6.4.2 | Pass |
| | | HV | See Section 6.4.2 | Pass |
| 4.2.17 | GSM | NV | See Section 6.4.3 | Pass |
| | | LV | See Section 6.4.3 | Pass |
| | | HV | See Section 6.4.3 | Pass |

Continued

| Clause No. | Test Mode | Test Condition | Test Band | |
|------------|-----------|----------------|-------------------------|---------|
| | | | GSM900, DCS1800 | |
| | | | Test Data | Verdict |
| 4.2.20 | GSM | NTNV | See Section 6.4.4 | Pass |
| 4.2.26 | EGPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.27 | EGPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.28 | EGPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.29 | EGPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| | | LTLV | Appendix B - GSM - LTLV | Pass |
| | | LTHV | Appendix C - GSM - LTHV | Pass |
| | | HTLV | Appendix D - GSM - HTLV | Pass |
| | | HTHV | Appendix E - GSM - HTHV | Pass |
| 4.2.30 | EGPRS | NTNV | See Section 6.4.5 | Pass |
| 4.2.32 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.34 | EGPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.35 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.38 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.40 | EGPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.42 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.43 | GSM | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.44 | GPRS | NTNV | Appendix A - GSM - NTVN | Pass |
| 4.2.45 | EGPRS | NTNV | Appendix A - GSM - NTVN | Pass |

6.4.2 Radiated spurious emissions - MS allocated a channel

| GSM 900 band: Middle Channel, Normal Voltage | | | | |
|--|-------------------|------------|-------------|-------------|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -63.84 | -36.00 | Pass |
| 78.97 | V | -66.52 | | |
| 1804.00 | V | -51.15 | -30.00 | |
| 2706.00 | V | -53.66 | | |
| 3608.00 | V | -50.51 | | |
| 157.00 | Horizontal | -67.53 | -36.00 | |
| 291.04 | H | -70.15 | | |
| 1804.00 | H | -45.95 | -30.00 | |
| 2706.00 | H | -53.24 | | |
| 3608.00 | H | -48.54 | | |
| GSM 900 band: Middle Channel, Low Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -63.38 | -36.00 | Pass |
| 78.97 | V | -66.79 | | |
| 1804.00 | V | -51.57 | -30.00 | |
| 2706.00 | V | -53.73 | | |
| 3608.00 | V | -50.21 | | |
| 157.00 | Horizontal | -67.33 | -36.00 | |
| 291.04 | H | -70.33 | | |
| 1804.00 | H | -45.86 | -30.00 | |
| 2706.00 | H | -53.53 | | |
| 3608.00 | H | -48.28 | | |
| GSM 900 band: Middle Channel, High Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -63.46 | -36.00 | Pass |
| 78.97 | V | -66.33 | | |
| 1804.00 | V | -51.26 | -30.00 | |
| 2706.00 | V | -54.04 | | |
| 3608.00 | V | -50.20 | | |
| 157.00 | Horizontal | -67.19 | -36.00 | |
| 291.04 | H | -70.74 | | |
| 1804.00 | H | -45.61 | -30.00 | |
| 2706.00 | H | -53.27 | | |
| 3608.00 | H | -48.12 | | |

| DCS 1800 band: Middle Channel, Normal Voltage | | | | |
|---|-------------------|------------|-------------|-------------|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -63.48 | -36.00 | Pass |
| 78.97 | V | -65.98 | | |
| 3495.60 | V | -48.67 | -30.00 | |
| 157.00 | Horizontal | -67.17 | -36.00 | |
| 291.04 | H | -69.57 | | |
| 3495.60 | H | -47.17 | -30.00 | |
| DCS 1800 band: Middle Channel, Low Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -63.93 | -36.00 | Pass |
| 78.97 | V | -65.97 | | |
| 3495.60 | V | -49.03 | -30.00 | |
| 157.00 | Horizontal | -67.33 | -36.00 | |
| 291.04 | H | -69.59 | | |
| 3495.60 | H | -47.41 | -30.00 | |
| DCS 1800 band: Middle Channel, High Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -64.19 | -36.00 | Pass |
| 78.97 | V | -66.19 | | |
| 3495.60 | V | -48.63 | -30.00 | |
| 157.00 | Horizontal | -67.12 | -36.00 | |
| 291.04 | H | -69.30 | | |
| 3495.60 | H | -47.31 | -30.00 | |

6.4.3 Radiated spurious emissions - MS in idle mode

| GSM 900 band: Middle Channel, Normal Voltage | | | | |
|--|-------------------|------------|-------------|-------------|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -64.34 | -57.00 | Pass |
| 77.32 | V | -67.23 | | |
| 1804.00 | V | -66.85 | -47.00 | |
| 187.75 | Horizontal | -69.86 | -57.00 | |
| 281.01 | H | -70.38 | | |
| 1804.00 | H | -65.83 | -47.00 | |
| GSM 900 band: Middle Channel, Low Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -64.53 | -57.00 | Pass |
| 77.32 | V | -67.02 | | |
| 1804.00 | V | -66.57 | -47.00 | |
| 187.75 | Horizontal | -69.58 | -57.00 | |
| 281.01 | H | -70.20 | | |
| 1804.00 | H | -66.28 | -47.00 | |
| GSM 900 band: Middle Channel, High Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -64.32 | -57.00 | Pass |
| 77.32 | V | -66.53 | | |
| 1804.00 | V | -66.36 | -47.00 | |
| 187.75 | Horizontal | -69.30 | -57.00 | |
| 281.01 | H | -70.21 | | |
| 1804.00 | H | -66.71 | -47.00 | |

| DCS 1800 band: Middle Channel, Normal Voltage | | | | |
|---|-------------------|------------|-------------|-------------|
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -64.17 | -57.00 | Pass |
| 77.32 | V | -67.53 | | |
| 3495.60 | V | -61.15 | -47.00 | |
| 187.75 | Horizontal | -69.51 | -57.00 | |
| 281.01 | H | -70.15 | | |
| 3495.60 | H | -61.58 | -47.00 | |
| DCS 1800 band: Middle Channel, Low Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -64.19 | -57.00 | Pass |
| 77.32 | V | -67.17 | | |
| 3495.60 | V | -61.65 | -47.00 | |
| 187.75 | Horizontal | -69.66 | -57.00 | |
| 281.01 | H | -69.83 | | |
| 3495.60 | H | -61.85 | -47.00 | |
| DCS 1800 band: Middle Channel, High Voltage | | | | |
| Frequency (MHz) | Spurious Emission | | Limit (dBm) | Test Result |
| | polarization | Level(dBm) | | |
| 32.75 | Vertical | -64.32 | -57.00 | Pass |
| 77.32 | V | -67.27 | | |
| 3495.60 | V | -61.40 | -47.00 | |
| 187.75 | Horizontal | -69.57 | -57.00 | |
| 281.01 | H | -69.73 | | |
| 3495.60 | H | -61.79 | -47.00 | |

6.4.4 Receiver blocking and spurious responses – speech channels

GSM 900 band:

| Channel frequency (MHz) | FBER (%) | Number of test samples | Limit (%) | Result |
|-------------------------|----------|------------------------|-----------|--------|
| 880.2 | 0.000 | 10000 | 2.439 | pass |
| 902.0 | 0.000 | 10000 | 2.439 | pass |
| 914.8 | 0.000 | 10000 | 2.439 | pass |

DCS 1800 band:

| Channel frequency (MHz) | FBER (%) | Number of test samples | Limit (%) | Result |
|-------------------------|----------|------------------------|-----------|--------|
| 1710.2 | 0.000 | 10000 | 2.439 | pass |
| 1747.8 | 0.000 | 10000 | 2.439 | pass |
| 1784.8 | 0.000 | 10000 | 2.439 | pass |

6.4.5 Blocking and spurious response in EGPRS configuration

GSM900 band:

| Frequency range (MHz) | BLER (%) | Number of RLC Blocks | Limit (%) | Type of Sub-test | Result |
|-----------------------|----------|----------------------|-----------|------------------|--------|
| 880.2 | 0.000 | 6000 | 1 | USF/MCS-9 | Pass |
| 898.4 | 0.000 | 6000 | 1 | USF/MCS-9 | Pass |
| 914.8 | 0.000 | 6000 | 1 | USF/MCS-9 | Pass |

DCS1800 Band:

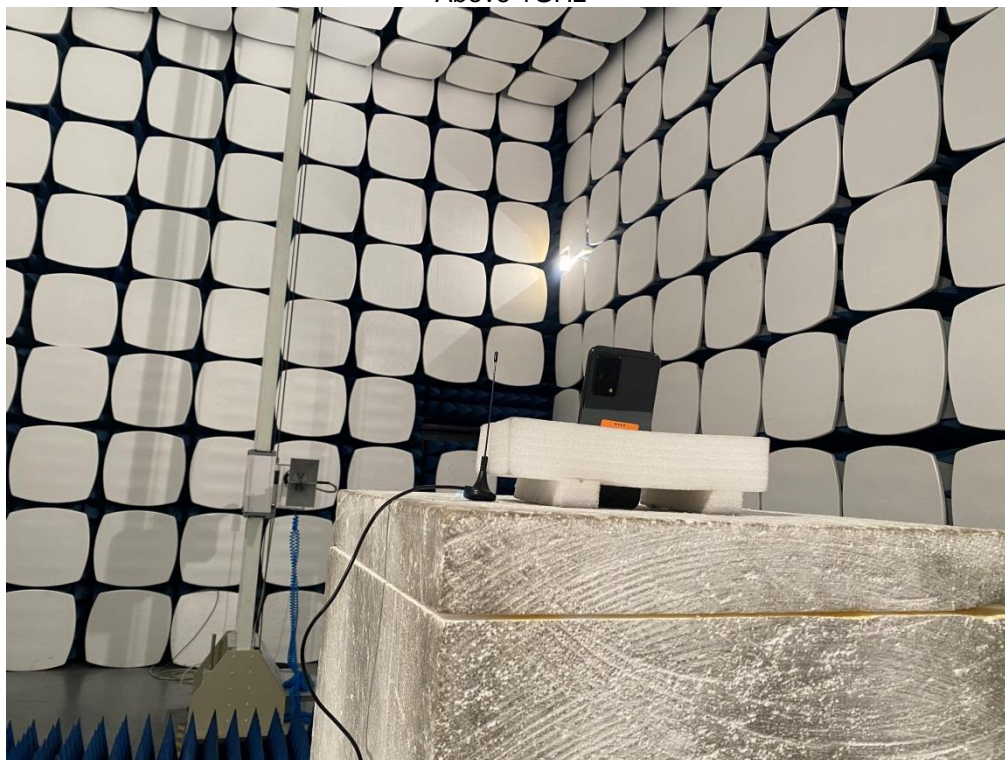
| Frequency range (MHz) | BLER (%) | Number of RLC Blocks | Limit (%) | Type of Sub-test | Result |
|-----------------------|----------|----------------------|-----------|------------------|--------|
| 1710.2 | 0.000 | 6000 | 1 | USF/MCS-9 | Pass |
| 1747.8 | 0.000 | 6000 | 1 | USF/MCS-9 | Pass |
| 1784.8 | 0.000 | 6000 | 1 | USF/MCS-9 | Pass |

7 Test Setup Photo

Radiated Spurious Emission
Below 1GHz



Above 1GHz



8 EUT Constructional Details

Reference to the test report No. CCISE200703101.

-----End of report-----