



FCC RF Test Report

APPLICANT : HMD Global Oy
EQUIPMENT : Mobile Phone
BRAND NAME : Nokia
MODEL NAME : TA-1221, TA-1231
FCC ID : 2AJOTTA-1221
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)

This is a data re-used report which is only valid together with the original test report. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

James Huang

Approved by: James Huang / Manager



Sporton International (Kunshan) Inc.

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



TABLE OF CONTENTS

1 GENERAL DESCRIPTION..... 4

1.1 Applicant 4

1.2 Manufacturer..... 4

1.3 Product Feature of Equipment Under Test..... 4

1.4 Product Specification of Equipment Under Test..... 5

1.5 Modification of EUT 5

1.6 Testing Location 6

1.7 Test Software..... 6

1.8 Re-use of Measured Data 6

2 LIST OF MEASURING EQUIPMENT..... 8

APPENDIX A. REFERENCE REPORT



1 General Description

1.1 Applicant

HMD Global Oy
Bertel Jungin aukio 9, 02600 Espoo, Finland

1.2 Manufacturer

HMD Global Oy
Bertel Jungin aukio 9, 02600 Espoo, Finland

1.3 Product Feature of Equipment Under Test

| Product Feature | |
|---------------------------------|---|
| Equipment | Mobile Phone |
| Brand Name | Nokia |
| Model Name | TA-1221, TA-1231 |
| FCC ID | 2AJOTTA-1221 |
| EUT supports Radios application | GSM/WCDMA/LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth BR/EDR/LE FM Receiver, GNSS |
| IMEI Code | Conducted: N/A Radiation: 355786100000962 |
| HW Version | V1.0 |
| SW Version | 00VPO_1_100 |
| EUT Stage | Production Unit |

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.



1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification | |
|---|--|
| Tx Frequency | GSM/GPRS/EDGE: 850: 824.2 MHz ~ 848.8 MHz 1900: 1850.2 MHz ~ 1909.8MHz WCDMA: Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz Band IV: 1712.4 MHz ~ 1752.6 MHz |
| Rx Frequency | GSM/GPRS/EDGE: 850: 869.2 MHz ~ 893.8 MHz 1900: 1930.2 MHz ~ 1989.8 MHz WCDMA: Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz Band IV: 2112.4 MHz ~ 2152.6 MHz |
| Antenna Type | LDS Antenna |
| Antenna Gain | Cellular Band: -0.50 dBi PCS Band: 0.50 dBi AWS Band: 0.50 dBi |
| Type of Modulation | GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA : BPSK HSDPA/DC-HSDPA : QPSK HSUPA : QPSK HSPA+ : 16QAM DC-HSDPA : 64QAM |

1.5 Modification of EUT

No modifications are made to the EUT during all test items.



1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

| | | | |
|---------------------------|--|----------------------------|---------------------------------------|
| Test Firm | Sporton International (Kunshan) Inc. | | |
| Test Site Location | No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958 | | |
| Test Site No. | Sporton Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | 03CH04-KS TH01-KS | CN1257 | 314309 |

1.7 Test Software

| Item | Site | Manufacture | Name | Version |
|------|-----------|-------------|------|--------------|
| 1. | 03CH04-KS | AUDIX | E3 | 6.2009-8-24a |

1.8 Re-use of Measured Data

1.6.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: TA-1221, TA-1231, FCC ID: 2AJOTTA-1221) is electrically identical to the reference device (Model: TA-1218, TA-1226, FCC ID: 2AJOTTA-1226) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 484596 D01.

1.6.2 Difference Section

For details concerning the similarity with respect to component placement, mechanical/electrical design etc., please refer to the Product Equality Declaration.

The re-used RF data includes the following bands provided in Appendix B (Sporton RF Report No. FG9D3105A for the reference device Model: TA-1218, TA-1226, FCC ID: 2AJOTTA-1226).

1.6.3 Reference detail Section:

| Equipment Class | Reference FCC ID | Folder Test | Report Title/Section |
|-----------------|------------------|--------------------------------|-------------------------|
| PCE (2G/3G) | 2AJOTTA-1226 | Part22H.24E.27L (FG9D3105A) | All sections applicable |



1.6.4 Spot Check Verification Data Section

In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for the following test items, the test result were consistent with FCC ID: 2AJOTTA-1226.

Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination that verification test data are sufficient to support it.

| Test Item | Mode | 2AJOTTA-1226 Worst Result | 2AJOTTA-1221 Worst Result | Difference (dB) |
|----------------------------------|---------------|---------------------------|---------------------------|-----------------|
| Average Conducted Power (dBm) | GSM 850 | 32.11 | 31.86 | -0.25 |
| | GSM 1900 | 28.96 | 28.68 | -0.28 |
| | WCDMA Band II | 23.03 | 23.11 | 0.08 |
| | WCDMA Band IV | 22.99 | 22.97 | -0.02 |
| | WCDMA Band V | 23.17 | 23.25 | 0.08 |
| Radiated Spurious Emission (dBm) | GSM 850 | -40.06 | -45.86 | -5.8 |
| | GSM1900 | -48.4 | -47.91 | 0.49 |
| | WCDMA Band IV | -52.31 | -52.68 | -0.37 |



2 List of Measuring Equipment

| Instrument | Manufacturer | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|---------------------------|----------------------|--------------------------|------------|-----------------|------------------|---------------|---------------|-----------------------|
| Spectrum Analyzer | R&S | FSV40 | 101040 | 10Hz~40GHz | Nov. 02, 2019 | Feb. 17, 2020 | Nov. 01, 2020 | Conducted (TH01-KS) |
| Thermal Chamber | Ten Billion | TTC-B3S | TBN-960502 | -40~+150°C | Nov. 19, 2019 | Feb. 17, 2020 | Nov. 18, 2020 | Conducted (TH01-KS) |
| EMI Test Receiver | R&S | ESR7 | 101404 | 9kHz~7GHz | Apr. 18, 2019 | Feb. 21, 2020 | Apr. 17, 2020 | Radiation (03CH04-SZ) |
| EXA Spectrum Analyzer | KEYSIGHT | N9010A | MY55150213 | 10Hz~44GHz | Apr. 18, 2019 | Feb. 21, 2020 | Apr. 17, 2020 | Radiation (03CH04-SZ) |
| Bilog Antenna | TeseQ | CBL6111D | 41909 | 30MHz~1GHz | Aug. 27, 2019 | Feb. 21, 2020 | Aug. 26, 2020 | Radiation (03CH04-SZ) |
| Double Ridge Horn Antenna | SCHWARZBECK | BBHA9120D | 9120D-1474 | 1GHz~18GHz | Apr. 01, 2019 | Feb. 21, 2020 | Mar. 31, 2020 | Radiation (03CH04-SZ) |
| Horn Antenna | SCHWARZBECK | BBHA9170 | 9170#679 | 15GHz~40GHz | Apr. 19, 2019 | Feb. 21, 2020 | Apr. 18, 2020 | Radiation (03CH04-SZ) |
| Amplifier | Burgeon | BPA-530 | 102211 | 0.01Hz ~3000MHz | Oct. 18, 2019 | Feb. 21, 2020 | Oct. 17, 2020 | Radiation (03CH04-SZ) |
| HF Amplifier | MITEQ | AMF-7D-00 101800-30-1 | 1943528 | 1GHz~18GHz | Oct. 18, 2019 | Feb. 21, 2020 | Oct. 17, 2020 | Radiation (03CH04-SZ) |
| HF Amplifier | MITEQ | TTA1840-35 -HG | 1871923 | 18GHz~40GHz | Jul. 22, 2019 | Feb. 21, 2020 | Jul. 21, 2020 | Radiation (03CH04-SZ) |
| Amplifier | Agilent Technologies | 83017A | MY53270156 | 500MHz~26.5GHz | Aug. 26, 2019 | Feb. 21, 2020 | Aug. 25, 2020 | Radiation (03CH04-SZ) |
| AC Power Source | Chroma | 61601 | N/A | N/A | NCR | Feb. 21, 2020 | NCR | Radiation (03CH04-SZ) |
| Turn Table | EM | EM1000 | N/A | 0~360 degree | NCR | Feb. 21, 2020 | NCR | Radiation (03CH04-SZ) |
| Antenna Mast | EM | EM1000 | N/A | 1 m~4 m | NCR | Feb. 21, 2020 | NCR | Radiation (03CH04-SZ) |

NCR: No Calibration Required.



Appendix A. Reference Report

Please refer to Sporton report number FG9D3105A which is issued separately.