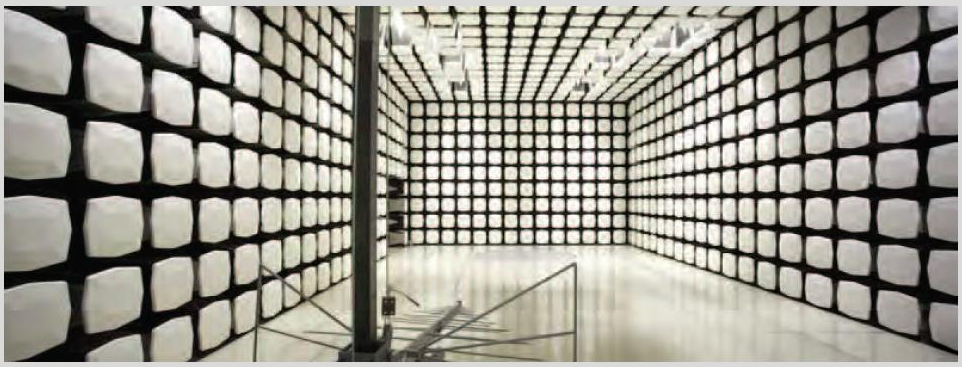
# Radio Test Report
## Application for a Class II Permissive Change of Equipment Authorization
## FCC Part 24 and IC RSS-133
## [1930MHz – 1990MHz]

## FCC Part 27 and IC RSS-139
## [2110MHz – 2180MHz]

## FCC ID: VBNAHFIC-01
## IC ID: 661W-AHFIC

## Nokia Solutions and Networks
## Airscale Base Transceiver Station Remote Radio Head
## Model: AHFIC

**Report: NOKI0007, Issue Date: April 24, 2020**



NVLAP LAB CODE: 201049-0

# CERTIFICATE OF TEST

**Last Date of Test: April 8, 2020**
**Nokia Solutions and Networks**
**EUT: Airscale Base Transceiver Station Remote Radio Head Model AHFIC**

## Radio Equipment Testing

### Standards

| Specification | Method |
|---|---|
| Code of Federal Regulations (CFR) Title 47 Part 2<br>(Radio Standards Specification) RSS-Gen Issue 6: 2019<br>CFR Title 47 Part 24 Subpart E – Broadband PCS<br>RSS-133 Issue 6 - January 18, 2018 – 2GHz Personal Communications Services<br>CFR Title 47 Part 27 Subpart C<br>RSS-139 Issue 3 - July 16, 2015 – Advanced Wireless Services (AWS) | ANSI C63.26-2015 with<br>FCC KDB 971168 D01 v03r01<br>FCC KDB 662911D01 v02r01 |

### Results

| Test Description | Applied | Results | Comments |
|---|---|---|---|
| Conducted Output Power | Yes | Pass | |
| Frequency Stability | No | N/A | Not requested. |
| Band Edge | Yes | Pass | |
| Occupied Bandwidth / Emission Mask | Yes | Pass | |
| Spurious Emissions at the Antenna Terminals | Yes | Pass | |
| Peak to Average Power (PAPR)/CCDF | Yes | Pass | |

### Deviations From Test Standards

None

### Approved By:

*Kyle Holgate, Operations Manager*

***Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.***

# REVISION HISTORY

| Revision Number | Description | Date (yyyy-mm-dd) | Page Number |
|---|---|---|---|
| 00 | None | | |

# ACCREDITATIONS AND AUTHORIZATIONS

## United States

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Element to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

## Canada

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

## European Union

**European Commission** – Within Element, we have a EU Notified Body validated for the EMCD and RED Directives.

## Australia/New Zealand

**ACMA** - Recognized by ACMA as a CAB for the acceptance of test data.

## Korea

**MSIT / RRA** - Recognized by KCC's RRA as a CAB for the acceptance of test data.

## Japan

**VCCI** - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

## Taiwan

**BSMI** – Recognized by BSMI as a CAB for the acceptance of test data.

**NCC** - Recognized by NCC as a CAB for the acceptance of test data.

## Singapore

**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

## Israel

**MOC** – Recognized by MOC as a CAB for the acceptance of test data.

## Hong Kong

**OFCA** – Recognized by OFCA as a CAB for the acceptance of test data.

## Vietnam

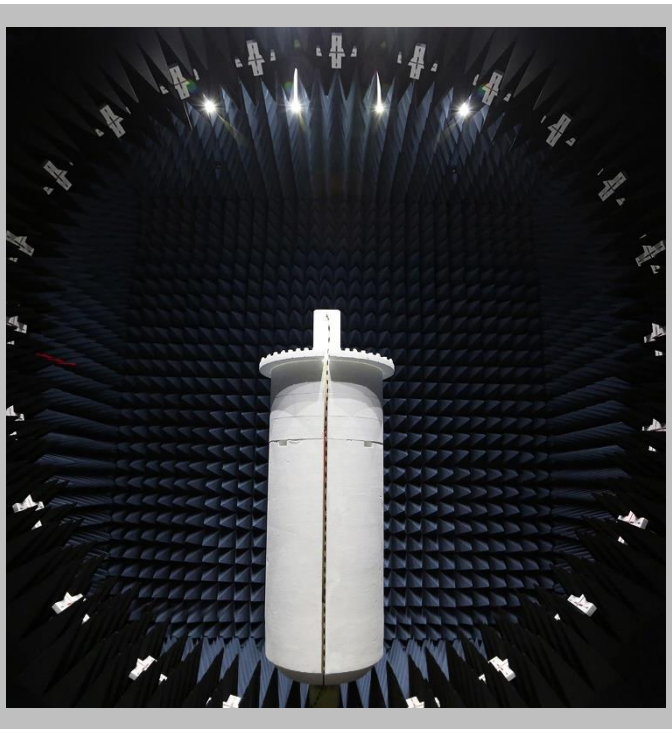
**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

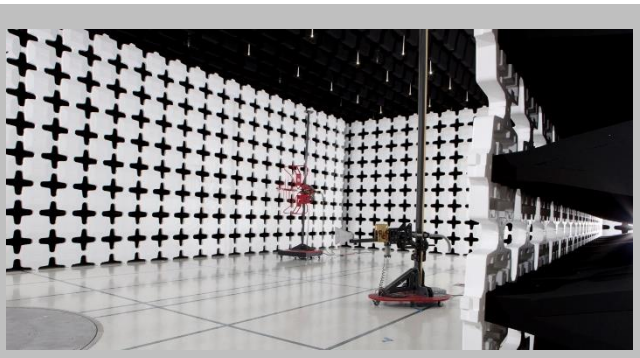
## SCOPE

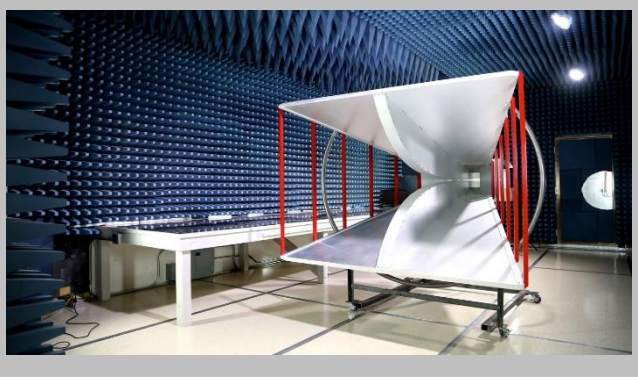
For details on the Scopes of our Accreditations, please visit:
https://www.nwemc.com/emc-testing-accreditations

# FACILITIES

| California | Minnesota | Oregon | Texas | Washington |
|---|---|---|---|---|
| Labs OC01-17<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | Labs MN01-10<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(612)-638-5136 | Labs EV01-12<br>6775 NE Evergreen Pkwy #400<br>Hillsboro, OR 97124<br>(503) 844-4066 | Labs TX01-09<br>3801 E Plano Pkwy<br>Plano, TX 75074<br>(469) 304-5255 | Labs NC01-05<br>19201 120th Ave NE<br>Bothell, WA 98011<br>(425)984-6600 |
| **NVLAP** | | | | |
| NVLAP Lab Code: 200676-0 | NVLAP Lab Code: 200881-0 | NVLAP Lab Code: 200630-0 | NVLAP Lab Code:201049-0 | NVLAP Lab Code: 200629-0 |
| **Innovation, Science and Economic Development Canada** | | | | |
| 2834B-1, 2834B-3 | 2834E-1, 2834E-3 | 2834D-1 | 2834G-1 | 2834F-1 |
| **BSMI** | | | | |
| SL2-IN-E-1154R | SL2-IN-E-1152R | SL2-IN-E-1017 | SL2-IN-E-1158R | SL2-IN-E-1153R |
| **VCCI** | | | | |
| A-0029 | A-0109 | A-0108 | A-0201 | A-0110 |
| **Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA** | | | | |
| US0158 | US0175 | US0017 | US0191 | US0157 |







# MEASUREMENT UNCERTAINTY

element
TMU.2015.07.10

## Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

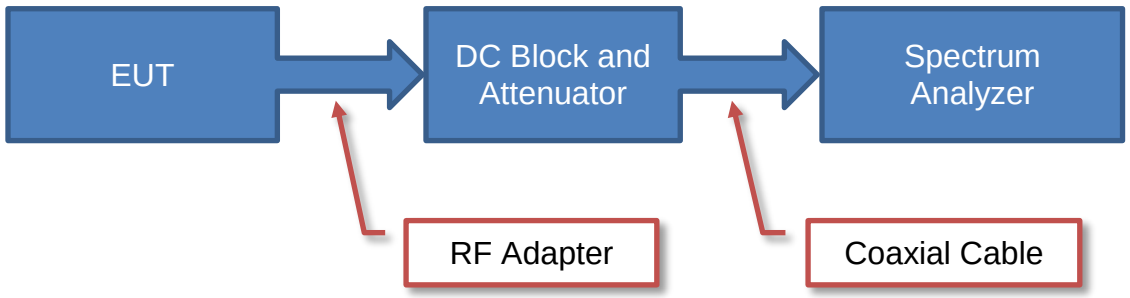
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

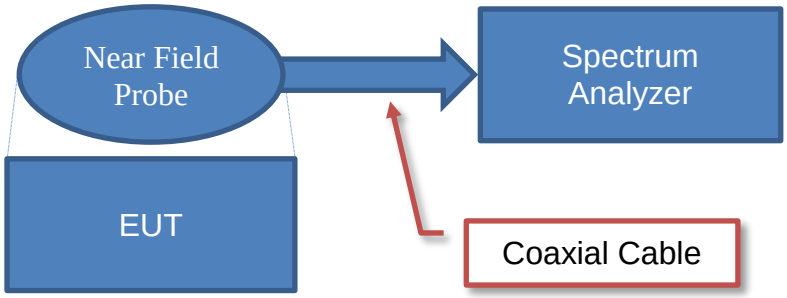
| Test | + MU | - MU |
|---|---|---|
| Frequency Accuracy | 0.0007% | -0.0007% |
| Amplitude Accuracy (dB) | 1.2 dB | -1.2 dB |
| Conducted Power (dB) | 1.2 dB | -1.2 dB |
| Radiated Power via Substitution (dB) | 0.7 dB | -0.7 dB |
| Temperature (degrees C) | 0.7°C | -0.7°C |
| Humidity (% RH) | 2.5% RH | -2.5% RH |
| Voltage (AC) | 1.0% | -1.0% |
| Voltage (DC) | 0.7% | -0.7% |
| Field Strength (dB) | 5.1 dB | -5.1 dB |
| AC Powerline Conducted Emissions (dB) | 2.6 dB | -2.6 dB |

# Test Setup Block Diagrams

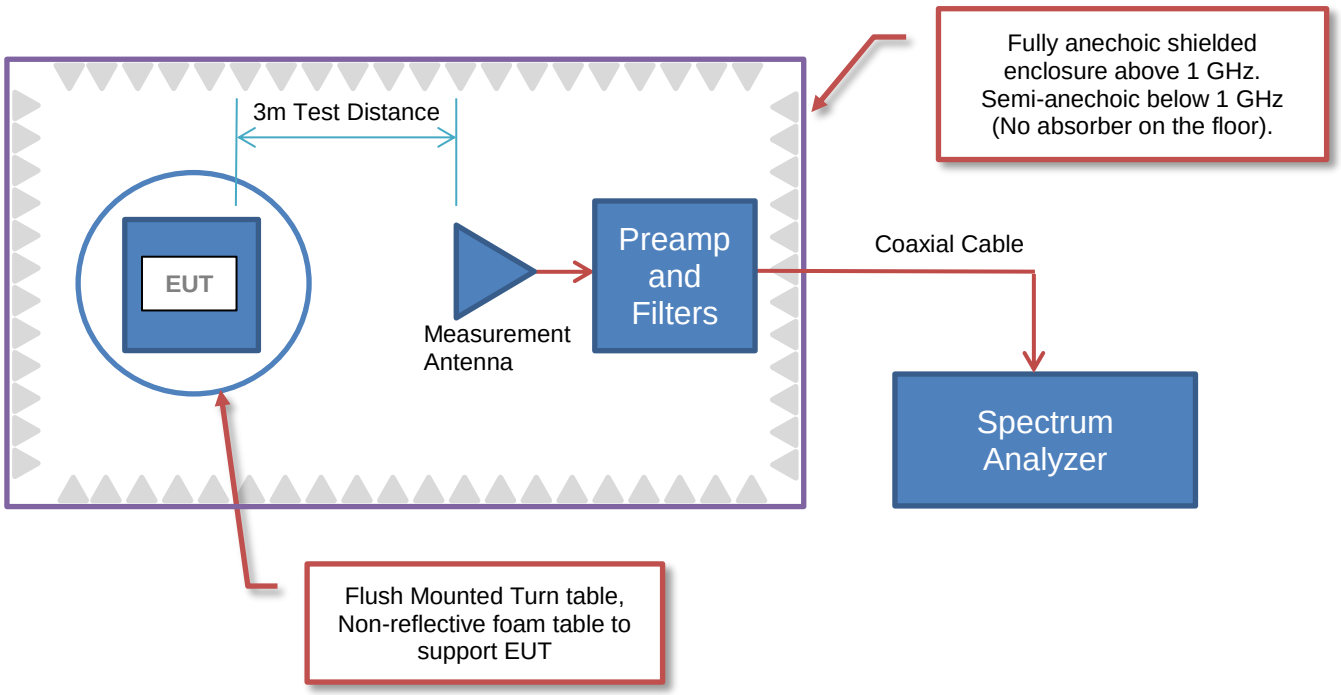
## Antenna Port Conducted Measurements




## Near Field Test Fixture Measurements




## Spurious Radiated Emissions



# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

| | |
|---|---|
| **Company Name:** | Nokia Solutions and Networks |
| **Address:** | 3201 Olympus Blvd |
| **City, State, Zip:** | Dallas, TX 75019 |
| **Test Requested By:** | Steve Mitchell |
| **EUT:** | Airscale Base Transceiver Station Remote Radio Head Model AHFIC |
| **First Date of Test:** | March 30, 2020 |
| **Last Date of Test:** | April 8, 2020 |
| **Receipt Date of Samples:** | March 30, 2020 |
| **Equipment Design Stage:** | Production |
| **Equipment Condition:** | No Damage |
| **Purchase Authorization:** | Verified |

## Information Provided by the Party Requesting the Test

**Functional Description of the EUT:**

A class II permissive change on the original filing is being pursued to add 5G NR (new radio) carriers to the Airscale BTS RRH model AHFIC FCC and ISED radio certifications. The original FCC certification submittal (FCC ID: VBNAHFIC-01) and the original ISED certification submittal (IC ID: 661W-AHFIC) was NTS Test Report Number PR075288 Revision 1 dated March 30, 2018. The original test effort includes testing for LTE technologies. Please refer to the test report on the original certification for details on all required testing.

All conducted RF testing performed for the original certification testing has been repeated using 5G NR carriers for this class II permissive change per correspondence/guidance from Nemko TCB. The same test methodology used in the original certification testing was used in this class II permissive change test effort. 5G NR carrier bandwidths of 5MHz, 10MHz, 15MHz and 20MHz with QPSK, 16QAM, 64QAM and 256QAM modulation types were verified under this effort. Tests performed under the class II change effort include RF power, peak to average power ratio, emission bandwidth (99% and 26 dB down), band edge spurious emissions, and conducted spurious emissions. The 5G NR carriers/modulation types for this testing are based upon 3GPP TS 38.141-1 Test Models and are NR-FR1-TM 1.1 (QPSK modulation type), NR-FR1-TM 3.2 (16QAM modulation type), NR-FR1-TM 3.1 (64QAM modulation type), and NR-FR1-TM 3.1a (256QAM modulation type).

The testing was performed on the same hardware (AHFIC) as the original certification test. The same AHFIC RF ports (Ant 3 for AWS Band and Ant 7 for PCS Band) determined in the original certification testing to be the highest power ports were used for all testing in this effort. The base station and remote radio head software for this testing is an updated release that includes 5G NR carrier support.

The radiated emissions and frequency stability measurements performed in the original certification was not repeated under this effort per TCB guidance. The radiated emission and frequency stability/accuracy results from the original certification had enough margin to preclude requiring additional testing. The same frequency stability/accuracy radio design is the same for all radio technologies/modulation types.

The equipment under test (EUT) is a Nokia Solutions and Networks AirScale Base Transceiver Station (BTS) Remote Radio Head (RRH) module, model AHFIC. The AHFIC remote radio head is a multistandard multicarrier radio module designed to support LTE, narrow band IoT (internet of things) operations (in-band, guard band, standalone) and 5G NR. The scope of testing in this effort is for 5G NR operations.

The AHFIC RRH has eight transmit/eight receive antenna ports (4TX/4RX for Band 2 and 4TX/4RX for Band 66a). Antenna ports 1-4 supports 3GPP frequency band 66a (BTS Rx: 1710 to 1780 MHz/BTS TX: 2110 to 2180 MHz). Antenna ports 5-8 supports 3GPP frequency band 2 (BTS Rx: 1850 to 1910 MHz/BTS TX: 1930 to 1990 MHz). The maximum RF output power of the RRH is 320 Watts (40 watts per carrier for Band 2, 60 watts per carrier for Band 66a). The maximum power output per antenna pair (1&5, 2&6, 3&7, 4&8) is 80 watts. The RRH can be operated as a 4x4 MIMO, 2x2 MIMO or as non-MIMO. The TX and RX instantaneous bandwidth cover the full operational RRH bandwidth. The RRH supports 5G NR channel bandwidths of 5MHz, 10MHz, 15MHz and 20MHz for 3GPP frequency bands n2 and n66a operations. The RRH supports four 5G NR downlink modulation types (QPSK, 16QAM, 64QAM and 256QAM).

The RRH has external interfaces including DC power (DC In), ground, transmit/receive (ANT), external alarm (EAC),

optical CPRI (OPT) and remote electrical tilt (RET). The RRH with applicable installation kit may be pole or wall mounted. The RRH may be configured with optional cooling fan.
The 5G NR channel bandwidths are 5, 10, 15 and 20MHz. The channel spacing is 100 kHz between channel numbers. The AHFIC 5G NR downlink channel numbers and frequencies for Band n2 (PCS Band) are as follows:

| | Downlink NR-ARFCN | Downlink Frequency (MHz) | 5G NR Channel Bandwidth | | | |
|---|---|---|---|---|---|---|
| | | | 5 MHz | 10 MHz | 15 MHz | 20 MHz |
| AHFIC PCS Band on Ant 5, 6, 7 and 8 | 386000 | 1930.0 | Band Edge | Band Edge | Band Edge | Band Edge |
| | | | | | | |
| | 386500 | 1932.5 | Bottom Ch | | | |
| | | | | | | |
| | 387000 | 1935.0 | | Bottom Ch | | |
| | | | | | | |
| | 387500 | 1937.5 | | | Bottom Ch | |
| | | | | | | |
| | 388000 | 1940.0 | | | | Bottom Ch |
| | | | | | | |
| | 392500 | 1962.5 | Middle Ch | Middle Ch | Middle Ch | Middle Ch |
| | | | | | | |
| | 396000 | 1980.0 | | | | Top Channel |
| | | | | | | |
| | 396500 | 1982.5 | | | Top Channel | |
| | | | | | | |
| | 397000 | 1985.0 | | Top Channel | | |
| | | | | | | |
| | 397500 | 1987.5 | Top Channel | | | |
| | | | | | | |
| | 398000 | 1990.0 | Band Edge | Band Edge | Band Edge | Band Edge |

AHFIC Downlink Band Edge 5G NR Band n2 Frequency Channels

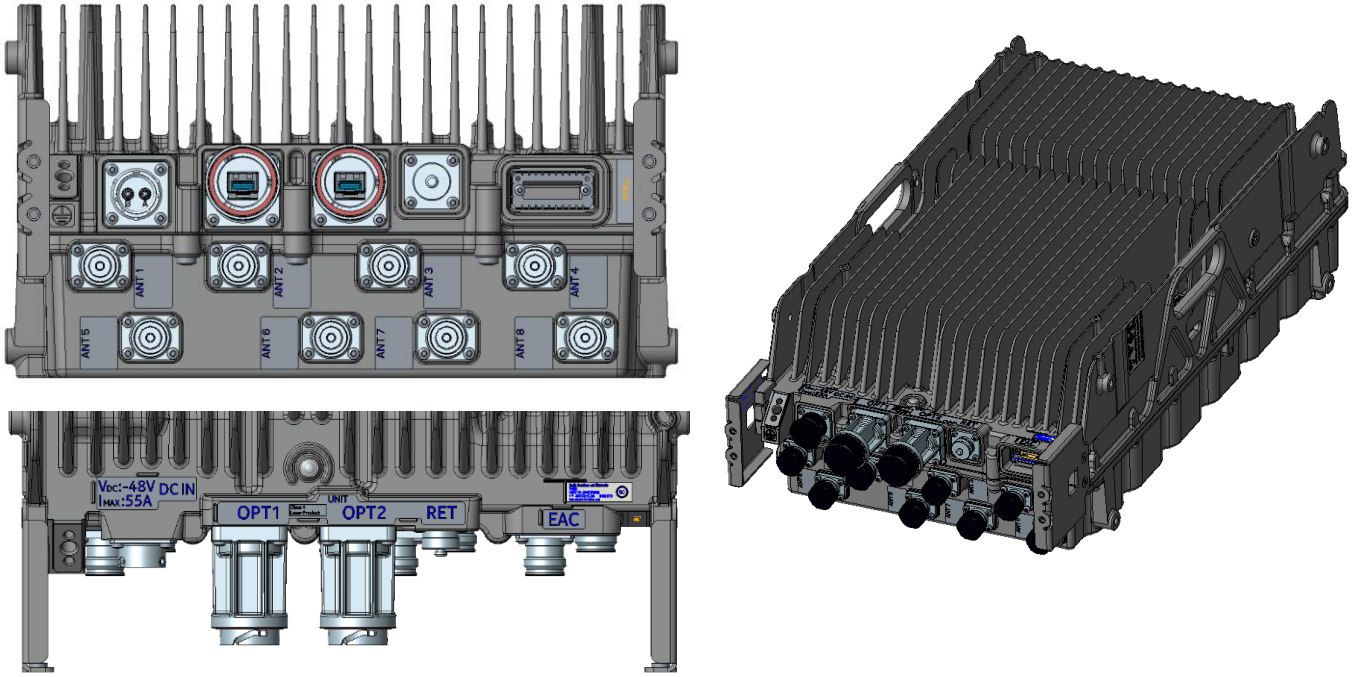
The AHFIC 5G NR downlink channel numbers and frequencies for Band n66a (AWS Band) are as follows:

| | Downlink NR-ARFCN | Downlink Frequency (MHz) | 5G NR Channel Bandwidth | | | |
|---|---|---|---|---|---|---|
| | | | 5 MHz | 10 MHz | 15 MHz | 20 MHz |
| AHFIC AWS Band on Ant 1, 2, 3 and 4 | 422000 | 2110.0 | Band Edge | Band Edge | Band Edge | Band Edge |
| | | | | | | |
| | 422500 | 2112.5 | Bottom Ch | | | |
| | | | | | | |
| | 423000 | 2115.0 | | Bottom Ch | | |
| | | | | | | |
| | 423500 | 2117.5 | | | Bottom Ch | |
| | | | | | | |
| | 424000 | 2120.0 | | | | Bottom Ch |
| | | | | | | |
| | 429000 | 2145.0 | Middle Ch | Middle Ch | Middle Ch | Middle Ch |
| | | | | | | |
| | 434000 | 2170.0 | | | | Top Channel |
| | | | | | | |
| | 434500 | 2172.5 | | | Top Channel | |
| | | | | | | |
| | 435000 | 2175.0 | | Top Channel | | |
| | | | | | | |
| | 435500 | 2177.5 | Top Channel | | | |
| | | | | | | |
| | 436000 | 2180.0 | Band Edge | Band Edge | Band Edge | Band Edge |

AHFIC Downlink Band Edge 5G NR Band n66a Frequency Channels

# PRODUCT DESCRIPTION

AHFIC Connector Layout:




AHFIC External Interfaces

| Name | Qty | Connector Type | Purpose (and Description) |
|---|---|---|---|
| DC In | 1 | Quick Disconnect | 2-pole Power Circular Connector |
| GND | 1 | Screw lug (2xM5/1xM8) | Ground |
| ANT | 8 | 4.3-10 | RF signal for Transmitter/Receiver (50 Ohm) |
| Unit | 1 | LED | Unit Status LED |
| EAC | 1 | MDR26 | External Alarm Interface (4 alarms) |
| OPT | 2 | SFP+ cage | Optical CPRI Interface up to 10 Gps. |
| | 1 | 8-pin circular connector conforming to IEC 60130-9 – Ed.3.0 | AISG 2.0 to external devices |
| Fan | 1 | Molex Microfit | Power for RRH Fan. Located on the side of RRH. |

**Testing Objective:**

A class II permissive change on the original filing is being pursued to add 5G NR (new radio) carriers to the Airscale BTS RRH model AHFIC FCC and ISED radio certifications.

# CONFIGURATIONS

## Configuration NOKI0007- 1

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

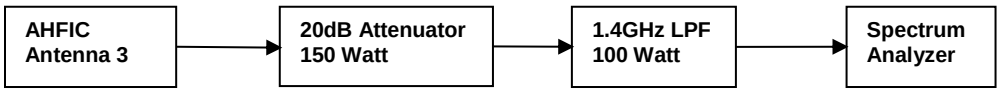
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| Low Pass Filter 1.4GHz/100W | Microwave Circuits,Inc. | L13502G1 | SN2454-01 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ2075 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 1, 2, 4 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [AHFIC] Ant port #3 | Attenuator 150W/20db [BZ1165] |
| Attenuator 150W/20dB [BZ2075] | N | NA | N | RF cable HS-SUCOFLEX_106 | LowPass filter 1.4G/100W |
| Low Pass Filter 1.4G/100W | N | NA | N | Attenuator 150W/20dB [BZ2075] | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | Low Pass Filter 1.4G/100W | Analyzer |

**RF Test Setup Diagram:**



# CONFIGURATIONS

## Configuration NOKI0007- 2

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

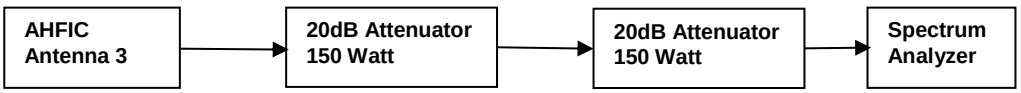
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ1165 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ2075 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 1, 2, 4 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [AHFIC] Ant port #3 | Attenuator 150W/20dB [BZ1165] |
| Attenuator 150W/20dB [BZ2075] | N | NA | N | RF cable HS-SUCOFLEX_106 | Attenuator 150W/20dB [BZ1165] |
| Attenuator 150W/20dB [BZ1165] | N | NA | N | Attenuator 150W/20dB [BZ2075] | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | Attenuator 150W/20dB [BZ2075] | Analyzer |

**RF Test Setup Diagram:**



# CONFIGURATIONS

## Configuration NOKI0007- 3

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

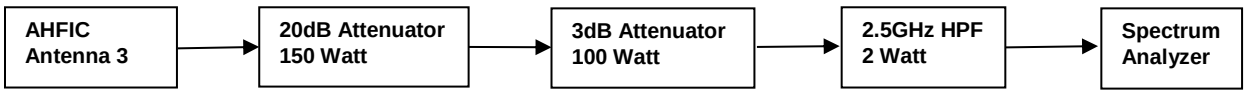
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| High Pass Filter 2.5GHz/2W | RLC Electronics | F-100-3000-5-R | 0028 |
| Attenuator 100W/3dB | AeroflexWeinschel | 47-3-33 | CG5493 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ2075 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 1, 2, 4 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [RRH] RF port #3 | Attenuator 150W/20dB [BZ1165] |
| Attenuator 150W/20dB [BZ2075] | N | NA | N | RF cable HS-SUCOFLEX_106 | Attenuator 100W/3dB |
| Attenuator 100W/3dB | N | NA | N | Attenuator 150W/20dB | High Pass Filter 2.5GHz |
| High Pass Filter 2.5GHz/2W | N | NA | N | Attenuator 100W/3dB | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | High Pass Filter 2.5GHz/2W | Analyzer |

**RF Test Setup Diagram:**



# CONFIGURATIONS

## Configuration NOKI0007- 4

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

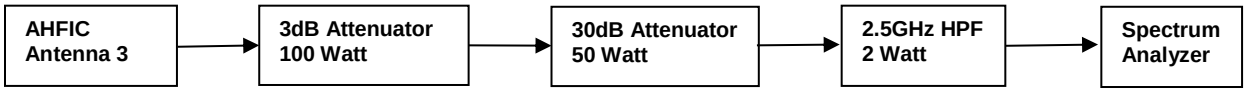
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| High Pass Filter 2.5GHz/2W | RLC Electronics | F-100-3000-5-R | 0028 |
| Attenuator 100W/3dB | AeroflexWeinschel | 47-3-33 | CG5493 |
| Attenuator 50W/30dB | Narda | 7768-30 | 1 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 1, 2, 4 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [AHFIC] Ant port #3 | Attenuator 100W/3dB |
| Attenuator 100W/3dB | N | NA | N | RF cable HS-SUCOFLEX_106 | Attenuator 50W/30dB |
| Attenuator 50W/30dB | N | NA | N | Attenuator 100W/3dB | High Pass Filter 2.5GHz |
| High Pass Filter 2.5GHz/2W | N | NA | N | Attenuator 50W/30dB | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | High Pass Filter 2.5GHz/2W | Analyzer |

**RF Test Setup Diagram:**



# CONFIGURATIONS

## Configuration NOKI0007- 5

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

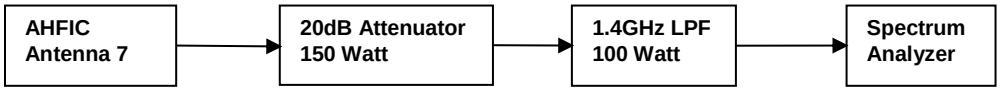
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| Low Pass Filter 1.4GHz/100W | Microwave Circuits,Inc. | L13502G1 | SN2454-01 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ2075 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 5, 6, 8 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables/Loads/Attenuators/Filters | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [AHFIC] Ant port #7 | Attenuator 150W/20db [BZ1165] |
| Attenuator 150W/20dB [BZ2075] | N | NA | N | RF cable HS-SUCOFLEX_106 | LowPass filter 1.4G/100W |
| Low Pass Filter 1.4G/100W | N | NA | N | Attenuator 150W/20dB [BZ2075] | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | Low Pass Filter 1.4G/100W | Analyzer |

**RF Test Setup Diagram:**



# CONFIGURATIONS

## Configuration NOKI0007- 6

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

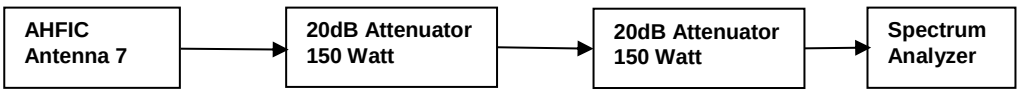
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ1165 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ2075 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 5, 6, 8 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables/Loads/Attenuators/Filters | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [AHFIC] Ant port #7 | Attenuator 150W/20dB [BZ1165] |
| Attenuator 150W/20dB [BZ2075] | N | NA | N | RF cable HS-SUCOFLEX_106 | Attenuator 150W/20dB [BZ1165] |
| Attenuator 150W/20dB [BZ1165] | N | NA | N | Attenuator 150W/20dB [BZ2075] | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | Attenuator 150W/20dB [BZ2075] | Analyzer |

**RF Test Setup Diagram:**



# CONFIGURATIONS

## Configuration NOKI0007- 7

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

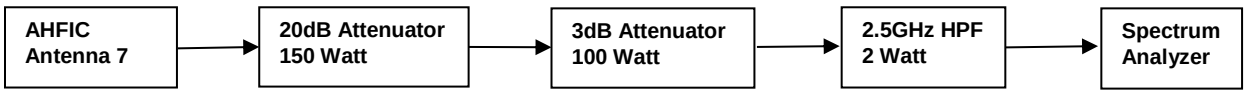
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| High Pass Filter 2.5GHz/2W | RLC Electronics | F-100-3000-5-R | 0028 |
| Attenuator 100W/3dB | AeroflexWeinschel | 47-3-33 | CG5493 |
| Attenuator 150W/20dB | AeroflexWeinschel | 66-20-33 | BZ2075 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 5, 6, 8 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables/Loads/Attenuators/Filters | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [RRH] RF port #7 | Attenuator 150W/20dB [BZ1165] |
| Attenuator 150W/20dB [BZ2075] | N | NA | N | RF cable HS-SUCOFLEX_106 | Attenuator 100W/3dB |
| Attenuator 100W/3dB | N | NA | N | Attenuator 150W/20dB | High Pass Filter 2.5GHz |
| High Pass Filter 2.5GHz/2W | N | NA | N | Attenuator 100W/3dB | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | High Pass Filter 2.5GHz/2W | Analyzer |

**RF Test Setup Diagram:**



# CONFIGURATIONS

## Configuration NOKI0007- 8

| Software/Firmware Running during test | |
|---|---|
| **Description** | **Version** |
| Radio Module Software | FRM50_03_R01 |
| BTS Software Version | 5G20A_GNB_0000_000840_000637 |

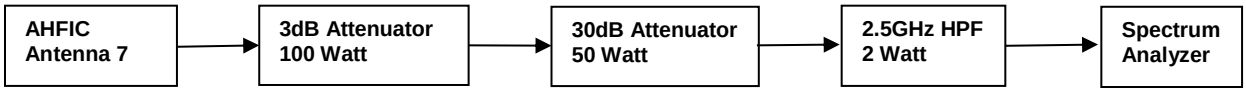
| Equipment being tested (include Peripherals) | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| AMIA (BTS System Module) | Nokia Solutions and Networks | 473098A.203 | RK182307104 |
| ASIK (BTS System Module) | Nokia Solutions and Networks | 474021A.101 | L1183529610 |
| ABIL (BTS System Module) | Nokia Solutions and Networks | 474020A.102 | L1183605740 |
| AHFIC (Radio Module Model) | Nokia Solutions and Networks | 474239A.101 | K9180317594 |
| High Pass Filter 2.5GHz/2W | RLC Electronics | F-100-3000-5-R | 0028 |
| Attenuator 100W/3dB | AeroflexWeinschel | 47-3-33 | CG5493 |
| Attenuator 50W/30dB | Narda | 7768-30 | 1 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | KR16090020030 |
| SFP+ 9.8G,300M,850NM | Nokia | 473842.A101 | MA17331610207 |
| HP ProBook 6470b | HP | B2G14EC#ABA | CNU246B8XP |
| HP- DC System power supply | HP | 6032A | 3440A-10308 |
| FPAC (DC-pwr supply) | Nokia | 472438A.101 | G7111007146 |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00005TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00006TMC |
| 2 Meter RF cable | Times Microwave Systems | SPP250NM43MR2.0M | 463559-00002TMC |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC867 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TV066 |
| 250W -50ohm -Terminating Load | API Weinschel inc | 1433-3-LIM | TC870 |
| Fiber Optic cable 25m | Occfiber.com | BX002DAIS | 334280 |
| CAT5e data cable | BELKIN | #R7J304 | E178882 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| CAT5e data cable | LEONI L | 64867m | 146180 |
| FYGB GPS receiver | Nokia | 472748A | 71231431 |
| Cat-5e cable | CSA | LL73189 | E151955 |
| 2 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_106 | SN297372 |
| 1 Meter RF cable | Huber + Suhner, Inc. | HS-SUCOFLEX_104 | SN551123/4 |

| Cables (Peripheral) | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| Fiber Optic cable | N | 25 meters | N | ASIK | AHFIC |
| Cat-5e cable (CSA) | Y | 25 meters | N | ASIK | FYGB GPS receiver |
| Cat-5e cable | Y | 25 meters | N | ASIK | WebEM- PC |
| Times Microwave Systems | Y | 2 meters | N | EUT [RRH] Ant ports 5, 6, 8 | 250W -50ohm - Load |

# CONFIGURATIONS

| Cables/Loads/Attenuators/Filters | | | | | |
|---|---|---|---|---|---|
| **Description** | **Shield (Y/N)** | **Length (m)** | **Ferrite (Y/N)** | **Connection 1** | **Connection 2** |
| HS-SUCOFLEX_106 | Y | 2 meters | N | EUT [AHFIC] Ant port #7 | Attenuator 100W/3dB |
| Attenuator 100W/3dB | N | NA | N | RF cable HS-SUCOFLEX_106 | Attenuator 50W/30dB |
| Attenuator 50W/30dB | N | NA | N | Attenuator 100W/3dB | High Pass Filter 2.5GHz |
| High Pass Filter 2.5GHz/2W | N | NA | N | Attenuator 50W/30dB | RF cable HS-SUCOFLEX_104 |
| HS-SUCOFLEX_104 | Y | 1 meter | N | High Pass Filter 2.5GHz/2W | Analyzer |

**RF Test Setup Diagram:**



# MODIFICATIONS

## Equipment Modifications

| Item | Date | Test | Modification | Note | Disposition of EUT |
|---|---|---|---|---|---|
| 1 | 2020-04-06 | Conducted Output Power | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 2 | 2020-04-08 | Band Edge | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 3 | 2020-04-08 | Occupied Bandwidth Emission Mask | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 4 | 2020-04-08 | Spurious Emissions at the Antenna Terminals | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 5 | 2020-04-08 | Peak to Average Power (PAPR) | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |