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Report On

Radio Testing of the Nokia Solutions and Networks Oy
Airscale Base Station RRH 2100 MHz
Radio Access technology: E-UTRA (FDD)
In accordance with FCC CFR 47 Part 2 and FCC CFR 47 Part 27

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FCC ID: VBNAHIB-01

Document 75945681 Report 01 Issue 2 **April 2019**

TÜV SÜD, Octagon House, Concorde Way, Segensworth North,
Fareham, Hampshire, United Kingdom, PO15 5RL
Tel: +44 (0) 1489 558100. Website: www.tuv-sud.co.uk

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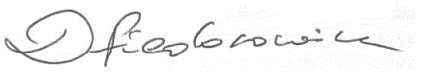
Document 75945681 Report 01 Issue 2

April 2019

PREPARED FOR

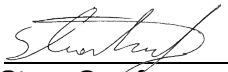
Nokia Solutions and Networks Oy
PO Box 319
Kaapelitie 4
FI-90620
Oulu
Finland

PREPARED BY



Daria Fiedorowicz
Senior Administrator (Technical)

APPROVED BY



Steve Scarfe
Authorised Signatory

DATED 17 April 2019

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SECTION 1

REPORT SUMMARY

Radio Testing of the Nokia Solutions and Networks Oy
Airscale Base Station RRH 2100 MHz
Radio Access technology: E-UTRA (FDD)
In accordance with FCC CFR 47 Part 2 and FCC CFR 47 Part 27

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Radio Testing of the Nokia Solutions and Networks Oy Airscale Base Station RRH 2100 MHz Radio Access technology: E-UTRA (FDD) in accordance with FCC CFR 47 Part 2 and FCC CFR 47 Part 27

Objective	To perform Radio Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Nokia Solutions and Networks Oy
Model Number(s)	AHIB
Serial Number(s)	EA184712269
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 2 (2017) FCC CFR 47 Part 27 (2018)
Order Number Date	VSH/ 90960188 02 April 2019
Start of Test	18 March 2019
Finish of Test	31 March 2019
Name of Engineer(s)	Jari Vähämäki and Sami Riuttanen

This report has been up issued to issue 2 and should be read in place of Issue 1 to correct Emission Designators and typographical errors

SECTION 2

DISCLAIMERS AND COPYRIGHT

2.1 DISCLAIMERS AND COPYRIGHT

This report relates only to the actual item/items tested.

ANNEX A

NOKIA SOLUTIONS AND NETWORKS OY TEST REPORT NO: TYPEAPPR-1508717799-612

Nokia Networks

TEST REPORT NO: TYPEAPPR-1508717799-612

FCC ID: VBNAHIB-01

Date:	Oulu 08. Apr 2019
Pages:	137
Appendices:	-

Equipment Under Test:	Airscale Base Station RRH 2100 MHz Radio Access technology: E-UTRA (FDD)
Type:	AHIB
Manufacturer:	Nokia Solutions and Networks Oy
Address:	P.O. Box 319, Kaapelitie 4, FI-90620, Oulu, Finland
Task:	Conformance test according to the specifications mentioned below
Test Specification(s):	FCC 47 CFR part 2 (2017) and FCC 47 CFR part 27 (2018)
Result:	The EUT complies with the requirements of the specification

The results relate only to the items tested as described in this test report.

Approved by:	**Date**	**Signature**
Jari Virta Product Conformity Manager Nokia Solutions and Networks Oy	08. Apr 2019	

CONTENTS

1. SUMMARY

Due to HW version changes and extended frequency range of AHIB unit a FCC class 2 permissive change is mandatory to grant the permission to use these configurations.

The following tests were performed according to the FCC rules in order to verify the compliance of the EUT with the FCC requirements:

Test No.	Measurement	FCC Rule	Page Number of this Report	Result
1	RF Power Output Transmitter Output Power	§ 2.1046, § 27.50	9	compliant
2	Modulation Characteristics	§ 2.1047, § 2.201	17	compliant
3	Occupied Bandwidth	§ 2.1049	18	compliant
4	Spurious Emissions at Antenna Terminals Transmitter Unwanted Emission (Conducted)	§ 2.1051, § 2.1057, § 27.53	26	compliant
5	Field Strength of Spurious Radiation	§ 2.1053, § 2.1057, § 27.53	41	compliant
6	Transmitter Frequency Stability	§ 2.1055, § 27.54	43	compliant

Table 1 Result – Summary

In accordance with the FCC Rule §15.3 (z) the equipment was tested with the limits that are valid for an *unintentional radiator*.

Measurements guidance: FCC OET laboratory KDB: 662911 D01 Multiple Transmitter Output v02r01 and FCC KDB 971168 D01 Power Meas License Digital Systems v03r01.

1.1 Test Laboratory:

Nokia Solutions and Networks Oy

Kaapelitie 4,

FI-90620, Oulu, Finland

Jari Virta

FCC Reg. No: 411251

OATS number: 661AI-1

Testing laboratory accreditation number: T297

1.2 Time Schedule

Test No.	1, 2, 3, 4, 6	5	
Start of Test:	18 March 2019	28 March.2019	
End of Test:	29 March 2019	31 March.2019	

1.3 Participants

Name	Function	Signature
RF Test person (Nokia) Jari Vähämäki	Testing, Setup of EUT Test no:1, 2 ,3, 4	
EMC Test person (Nokia) Sami Riuttanen	Test no 5, Setup of EUT	

2. EQUIPMENT UNDER TEST

The EUT is a LTE Base transceiver station RRH 2100 MHz with 4 power amplifiers.

The BTS performs the full RAN function of LTE system (evolved UTRA). This is sometimes referred to as collapsed RAN, where equivalent functions of former 3G BTS and 3G RNC are all integrated into BTS. BTS is connected directly to the core network via S1 interface, and to mobile stations via Air interface (Uu). In addition BTS's are optionally connected directly to each other via X2 interface for handover purposes.

The tested equipment is representative for serial production.

2.1 Configuration of EUT

The used different EUT configurations are shown by the following table.

Module Type	Flexi Multiradio BTS RRH 2100 MHz	
Radio Access Technology	E-UTRA	
Duplex mode	Frequency Division Duplex (FDD)	
Channel Bandwidth	Single carrier 5MHz (Config A) Single carrier 10MHz (Config B) Single carrier 15MHz (Config C) Single carrier 20MHz (Config D)	
Supply Voltage	120V AC	
Frequency Bands		
Channel Bandwidth 5 MHz	**Lowest** tunable freq. Singe carrier	2112.5 MHz
	Middle freq. Single carrier	2155 MHz
	Highest tunable freq. Single carrier	2197.5 MHz

Channel Bandwidth 10 MHz	**Lowest** tunable freq. Singe carrier	2115 MHz
	Middle freq. Single carrier	2155 MHz
	Highest tunable freq. Single carrier	2195 MHz
Channel Bandwidth 15 MHz	**Lowest** tunable freq. Singe carrier	2117.5 MHz
	Middle freq. Single carrier	2155 MHz
	Highest tunable freq. Single carrier	2192.5 MHz
Channel Bandwidth 20 MHz	**Lowest** tunable freq. Singe carrier	2120 MHz
	Middle freq. Single carrier	2155MHz
	Highest tunable freq. Single carrier	2190MHz

Single carrier		
Rated Output Power (Prat)	5W(37 dBm) conducted / carrier	
Dual carriers		
Rated Output Power (Prat)	5W(37dBm) conducted / carrier	
Downlink/Uplink ratio	6/3 to 8/1	
	RX	**TX**
Number of Antenna Ports	4 (ANT1 to ANT4)	4 (ANT1 to ANT4)
MiMo	Yes	Yes

Table 2 Overview of EUT configuration

The tests were performed with one EUT at the antenna ports ANT1, ANT2, ANT3, and ANT4.

The used different EUT configurations are shown by the following table.

Module Name	Serial-No.	Module Type	Config.
AHIB	EA184712269	RRH	A, B, C, D
Other Modules	**Module Type**		**Config.**
AMIA	AirScale Sub rack		A, B, C, D
ASIA	AirScale Common unit		A, B, C, D
ABIA	AirScale Capacity unit		A, B, C, D

Table 3 Configuration of EUT

For a functional description of the modules, please refer to the appropriate related parts and exhibit sections of this certification application.

2.2 Operating Conditions

The EUT supports QPSK, 16QAM, 64QAM and 256QAM modulation. If not stated otherwise, the following standard setup procedure for the EUT was used:

The transmitter was set up according to 3GPP TS 36.141 E-UTRA Test Models (E-TM) for all tests:

- E-TM 1.1: All QPSK modulation testing
- E-TM 3.1: All 64QAM modulation testing
- E-TM 3.2: All 16QAM modulation testing
- E-TM 3.1A: All 256QAM modulation testing

During the measurements, one carrier channel was tested at a time. The carrier was set to the maximum power level to ensure the maximum emission amplitudes during all measurements.

During the tests, the Flexi Multiradio BTS is transmitting a pseudo random bit pattern on the data channels. This ensures that the measurements of the emission characteristics of the transmitter are pursuant to § 2.1049.

3. TEST CONFIGURATION

If not stated otherwise, the following measurement configuration was used to perform all measurements (see figure below).

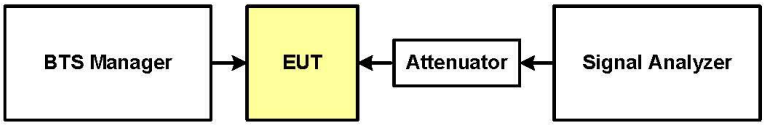

Figure 1 Test Configuration (single output)

The RF output of the transceiver (cell) under test is connected to a signal analyzer via a high power attenuator to protect the input of the signal analyzer from high RF power levels. A description of the analyzer settings is given in each of the sections describing the measurements. The other transceivers are terminated.

A complete list of the measurement equipment is included on page 62 of this measurement report.

3.1 Calibration of the Test Equipment

All relevant test equipment has a valid calibration from an external calibration laboratory. Additionally the signal analyzer has a built-in self-calibration procedure. This calibration procedure was activated prior to the measurements so that the analyzer is deemed accurate. High quality cables were used to connect the measurement equipment to the EUT. The actual loss of the attenuator and the cables was measured with a high precision network analyzer and taken into account for all measurements.

4. TEST RESULTS

4.1 Test No.1: RF Power Output (§ 2.1046, § 27.50)

4.1.1. Limits

Para. No. 27.50 (h).(1) Main, booster and base stations. (i) The maximum EIRP of a main, booster or base station shall not exceed 33 dBW + 10log(X/Y) dBW, where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition, except as provided in paragraph (h)(1)(ii) of this section.

Sample calculation: 33dBW + 10log(10MHz/5.5MHz) dBW = 34.26 dBW = ~2667W Test Procedure and Results

The EUT has been tested without any antennas.

Detachable Antenna: The maximum output power at the antenna terminals was measured using a signal analyzer.

The RF power was measured with a frequency sweep across the carrier. The carrier power was calculated from the signal analyzer by integration over the result. The base station maximum output power is the sum of the measured carrier power and the external attenuation (cable loss of the test set up).

For the MiMo output, RF power output was measured from each antenna port individually and the results summed mathematically in accordance to FCC KDB 662911 D01 -guidance.

Peak to average power (PAPR) was examined using CCDF method and 0.1% value recorded in dB to the tables below.

Measured laboratory room temperature and humidity during the tests				
Date	Temperature Min-Max:		Humidity Min-Max:	
18 March 2019 – 21 March 2019	23.33 °C	24.03 °C	12.53 RH%	22.42 RH%

Config A:

Carrier Frequency [MHz]	RF Power Output		PAPR	Result
	[dBm]	[W]	[dB]	
QPSK-Modulation ANT1				
2112.5	36.74763489	4.73	7.3	compliant
2155.0	36.67379761	4.65	7.3	compliant
2197.5	36.6023941	4.57	7.32	compliant
QPSK-Modulation ANT2				
2112.5	36.78570175	4.75	7.32	compliant
2155.0	36.83757019	4.70	7.28	compliant
2197.5	36.59424591	4.56	7.3	compliant
QPSK-Modulation ANT3				
2112.5	36.93076324	4.93	7.3	compliant
2155.0	36.92676163	4.93	7.3	compliant
2197.5	36.76357651	4.75	7.32	compliant
QPSK-Modulation ANT4				
2112.5	36.97916412	4.99	7.32	compliant
2155.0	36.85902023	4.85	7.32	compliant
2197.5	36.84195328	4.83	7.3	compliant
QPSK-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2112.5	42.88	19.40	-	compliant
2155.0	42.82	19.13	-	compliant
2197.5	42.72	18.71	-	compliant
64QAM-Modulation ANT1				
2112.5	36.76759338	4.75	7.3	compliant
2155.0	36.72044373	4.70	7.3	compliant
2197.5	36.58904266	4.56	7.3	compliant
64QAM-Modulation ANT2				
2112.5	36.87668228	4.87	7.32	compliant
2155.0	36.90093994	4.90	7.32	compliant
2197.5	36.69908142	4.68	7.3	compliant
64QAM-Modulation ANT3				
2112.5	36.96063995	4.97	7.3	compliant
2155.0	36.95309067	4.96	7.3	compliant
2197.5	36.77213287	4.76	7.3	compliant
64QAM-Modulation ANT4				
2112.5	37.03417969	5.05	7.34	compliant
2155	36.91185761	4.91	7.32	compliant
2197.5	36.83732224	4.83	7.32	compliant
64QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2112.5	42.93	19.64	-	compliant
2155.0	42.89	19.47	-	compliant
2197.5	42.75	18.82	-	compliant
16QAM-Modulation ANT1				
2112.5	36.90091705	4.90	7.32	compliant
2155.0	36.69140244	4.67	7.32	compliant
2197.5	36.50400162	4.47	7.32	compliant

16QAM-Modulation ANT2				
2112.5	37.00093842	5.01	7.32	compliant
2155.0	36.79305649	4.78	7.3	compliant
2197.5	36.53149033	4.50	7.3	compliant
16QAM-Modulation ANT3				
2112.5	36.74177933	4.72	7.3	compliant
2155.0	36.94667053	4.95	7.3	compliant
2197.5	36.74464798	4.73	7.3	compliant
16QAM-Modulation ANT4				
2112.5	37.2826767	5.35	7.3	compliant
2155.0	36.72159195	4.70	7.3	compliant
2197.5	36.71290207	4.69	7.3	compliant
16QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2112.5	43.01	19.98	-	compliant
2155.0	42.81	19.10	-	compliant
2197.5	42.65	18.39	-	compliant
256QAM-Modulation ANT1				
2112.5	36.74981689	4.73	7.34	compliant
2155.0	36.67988968	4.66	7.32	compliant
2197.5	36.62108612	4.59	7.34	compliant
256QAM-Modulation ANT2				
2112.5	36.81543732	4.80	7.32	compliant
2155.0	36.91704178	4.92	7.32	compliant
2197.5	36.72451019	4.70	7.32	compliant
256QAM-Modulation ANT3				
2112.5	36.95032883	4.95	7.32	compliant
2155.0	36.93942642	4.94	7.34	compliant
2197.5	36.74068069	4.72	7.32	compliant
256QAM-Modulation ANT4				
2112.5	36.99181366	5.00	7.34	compliant
2155.0	36.8877449	4.88	7.32	compliant
2197.5	36.89525223	4.89	7.34	compliant
256QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2112.5	42.9	19.49	-	compliant
2155.0	42.88	19.40	-	compliant
2197.5	42.77	18.91	-	compliant

Table 4 RF Power Output (5 MHz Channel BW)

Config B:

Carrier Frequency [MHz]	RF Power Output		PAPR	Result
	[dBm]	[W]	[dB]	
QPSK-Modulation ANT1				
2115	36.90327454	4.90	7.3	compliant
2155	36.81227112	4.80	7.3	compliant
2195	36.79705048	4.78	7.3	compliant
QPSK-Modulation ANT2				
2115	37.03250122	4.90	7.28	compliant
2155	36.93371201	4.83	7.28	compliant
2195	36.84980774	4.77	7.3	compliant
QPSK-Modulation ANT3				
2115	36.89385986	4.89	7.3	compliant
2155	36.88372803	4.88	7.3	compliant

2195	36.87915039	4.87	7.3	compliant
QPSK-Modulation ANT4				
2115	37.06143951	5.08	7.3	compliant
2155	36.90719604	4.91	7.3	compliant
2195	36.94760132	4.95	7.3	compliant
QPSK-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2115	42.96	19.77	-	compliant
2155	42.88	19.42	-	compliant
2195	42.87	19.38	-	compliant
64QAM-Modulation ANT1				
2115	36.89866257	4.90	7.3	compliant
2155	36.84091568	4.83	7.3	compliant
2195	36.78622818	4.77	7.3	compliant
64QAM-Modulation ANT2				
2115	37.01718521	5.03	7.32	compliant
2155	36.99623108	5.01	7.32	compliant
2195	36.84318161	4.83	7.3	compliant
64QAM-Modulation ANT3				
2115	36.8647728	4.86	7.3	compliant
2155	36.86923981	4.86	7.3	compliant
2195	36.86198807	4.86	7.3	compliant
64QAM-Modulation ANT4				
2115	37.02486801	5.04	7.28	compliant
2155	36.89227676	4.89	7.28	compliant
2195	36.92796707	4.93	7.3	compliant
64QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2115	42.97	19.83	-	compliant
2155	42.92	19.59	-	compliant
2195	42.88	19.39	-	compliant
16QAM-Modulation ANT1				
2115	36.90719986	4.91	7.3	compliant
2155	36.76448441	4.75	7.28	compliant
2195	36.74300385	4.72	7.3	compliant
16QAM-Modulation ANT2				
2115	37.11540222	5.15	7.28	compliant
2155	36.99923706	5.01	7.3	compliant
2195	36.91042328	4.91	7.3	compliant
16QAM-Modulation ANT3				
2115	37.00582886	5.02	7.28	compliant
2155	37.0082283	5.02	7.3	compliant
2195	36.89776993	4.90	7.3	compliant
16QAM-Modulation ANT4				
2115	37.06524277	5.09	7.3	compliant
2155	36.89313889	4.89	7.28	compliant
2195	36.89163589	4.89	7.3	compliant
16QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2115	43.04	20.16	-	compliant
2155	42.94	19.67	-	compliant
2195	42.42	19.42	-	compliant
256QAM-Modulation ANT1				
2115	36.95596313	4.96	7.3	compliant
2155	36.75930023	4.74	7.28	compliant
2195	36.81150818	4.80	7.3	compliant
256QAM-Modulation ANT2				
2115	37.05474091	5.08	7.3	compliant
2155	36.97405624	4.98	7.28	compliant

2195	36.86650085	4.86	7.32	compliant
256QAM-Modulation ANT3				
2115	37.03631973	5.05	7.28	compliant
2155	37.00072861	5.01	7.3	compliant
2195	36.89492035	4.89	7.3	compliant
256QAM-Modulation ANT4				
2115	37.10551071	5.14	7.3	compliant
2155	36.85650253	4.85	7.28	compliant
2195	36.93848038	4.94	7.3	compliant
256QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2115	43.06	20.23	-	compliant
2155	42.92	19.59	-	compliant
2195	42.9	19.49	-	compliant

Table 5 RF Power Output (10 MHz Channel BW)

Config C:

Carrier Frequency [MHz]	RF Power Output		PAPR	Result
	[dBm]	[W]	[dB]	
QPSK-Modulation ANT1				
2117.5	36.94218445	4.95	7.3	compliant
2155.0	36.67592239	4.65	7.3	compliant
2192.5	36.79786682	4.78	7.33	compliant
QPSK-Modulation ANT2				
2117.5	36.83131409	4.90	7.3	compliant
2155.0	36.72226715	4.70	7.3	compliant
2192.5	36.72547913	4.79	7.3	compliant
QPSK-Modulation ANT3				
2117.5	36.87189102	4.87	7.3	compliant
2155.0	36.75712967	4.74	7.3	compliant
2192.5	36.71620178	4.69	7.3	compliant
QPSK-Modulation ANT4				
2117.5	36.80822372	4.80	7.3	compliant
2155.0	36.55929565	4.53	7.3	compliant
2192.5	36.69644165	4.67	7.33	compliant
QPSK-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2117.5	42.9	19.51	-	compliant
2155.0	42.7	18.62	-	compliant
2192.5	42.77	18.94	-	compliant
64QAM-Modulation ANT1				
2117.5	36.90571976	4.90	7.3	compliant
2155.0	36.72341537	4.70	7.26	compliant
2192.5	36.80134964	4.79	7.3	compliant
64QAM-Modulation ANT2				
2117.5	36.89613724	4.89	7.3	compliant
2155.0	36.77558517	4.76	7.28	compliant
2192.5	36.72891235	4.71	7.32	compliant
64QAM-Modulation ANT3				
2117.5	36.89201736	4.89	7.5	compliant
2155.0	36.80897522	4.80	7.36	compliant
2192.5	36.78366852	4.77	7.5	compliant
64QAM-Modulation ANT4				
2117.5	36.85246277	4.84	7.28	compliant

2155.0	36.63288879	4.61	7.32	compliant
2192.5	36.77678299	4.76	7.28	compliant
64QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2117.5	42.91	19.53	-	compliant
2155.0	42.76	18.86	-	compliant
2192.5	42.79	19.03	-	compliant
16QAM-Modulation ANT1				
2117.5	36.93436432	4.94	7.3	compliant
2155.0	36.63263321	4.61	7.26	compliant
2192.5	36.61091232	4.58	7.3	compliant
16QAM-Modulation ANT2				
2117.5	36.78322601	4.77	7.3	compliant
2155.0	36.88304138	4.88	7.26	compliant
2192.5	36.6315918	4.60	7.3	compliant
16QAM-Modulation ANT3				
2117.5	37.04930878	5.07	7.5	compliant
2155.0	36.97147751	4.98	7.36	compliant
2192.5	36.97237778	4.98	7.5	compliant
16QAM-Modulation ANT4				
2117.5	36.83631134	4.83	7.26	compliant
2155.0	36.5836792	4.55	7.28	compliant
2192.5	36.68725204	4.66	7.3	compliant
16QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2117.5	42.92	19.60	-	compliant
2155.0	42.79	19.02	-	compliant
2192.5	42.75	18.83	-	compliant
256QAM-Modulation ANT1				
2117.5	36.91561127	4.92	7.3	compliant
2155.0	36.74101257	4.72	7.28	compliant
2192.5	36.78556061	4.77	7.32	compliant
256QAM-Modulation ANT2				
2117.5	36.92521667	4.93	7.3	compliant
2155.0	36.74673843	4.73	7.28	compliant
2192.5	36.78905106	4.77	7.32	compliant
256QAM-Modulation ANT3				
2117.5	36.87408066	4.87	7.52	compliant
2155.0	36.69386673	4.67	7.38	compliant
2192.5	36.82394409	4.81	7.5	compliant
256QAM-Modulation ANT4				
2117.5	36.97797394	4.99	7.3	compliant
2155.0	36.65937424	4.63	7.3	compliant
2192.5	36.85295486	4.85	7.3	compliant
256QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2117.5	42.94	19.70	-	compliant
2155.0	42.73	18.75	-	compliant
2192.5	42.83	19.20	-	compliant

Table 6 RF Power Output (15 MHz Channel BW)

Config D:

Carrier Frequency [MHz]	RF Power Output	PAPR		Result
	[dBm]	[W]	[dB]	
QPSK-Modulation ANT1				

2120	36.8235054	4.81	7.33	compliant
2155	36.601017	4.57	7.27	compliant
2190	36.72241592	4.70	7.3	compliant
QPSK-Modulation ANT2				
2120	36.83863831	4.83	7.3	compliant
2155	36.65656281	4.62	7.27	compliant
2190	36.77849579	4.70	7.3	compliant
QPSK-Modulation ANT3				
2120	36.790905	4.78	7.28	compliant
2155	36.7327919	4.71	7.25	compliant
2190	36.70283127	4.68	7.3	compliant
QPSK-Modulation ANT4				
2120	36.96420288	4.97	7.3	compliant
2155	36.65201187	4.63	7.27	compliant
2190	36.80491638	4.79	7.3	compliant
QPSK-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2120	42.88	19.39	-	compliant
2155	42.68	18.53	-	compliant
2190	42.76	18.88	-	compliant
64QAM-Modulation ANT1				
2120	36.84062195	4.83	7.28	compliant
2155	36.64813614	4.62	7.26	compliant
2190	36.72245407	4.70	7.3	compliant
64QAM-Modulation ANT2				
2120	36.85450745	4.85	7.3	compliant
2155	36.76203918	4.74	7.26	compliant
2190	36.75942993	4.74	7.3	compliant
64QAM-Modulation ANT3				
2120	36.83562851	4.83	7.28	compliant
2155	36.73270035	4.71	7.26	compliant
2190	36.76899338	4.75	7.3	compliant
64QAM-Modulation ANT4				
2120	37.050457	5.07	7.28	compliant
2155	36.61963654	4.59	7.26	compliant
2190	36.87979889	4.88	7.3	compliant
64QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2120	42.92	19.57	-	compliant
2155	42.71	18.67	-	compliant
2190	42.8	19.07	-	compliant
16QAM-Modulation ANT1				
2120	36.72065735	4.70	7.26	compliant
2155	36.7075119	4.69	7.24	compliant
2190	36.83293915	4.82	7.28	compliant
16QAM-Modulation ANT2				
2120	36.94911575	4.95	7.28	compliant
2155	36.82051086	4.81	7.24	compliant
2190	36.78999329	4.78	7.28	compliant
16QAM-Modulation ANT3				
2120	36.88509369	4.88	7.28	compliant
2155	36.73132706	4.71	7.24	compliant
2190	36.68458557	4.66	7.28	compliant
16QAM-Modulation ANT4				
2120	37.10879898	5.14	7.28	compliant
2155	36.77603149	4.76	7.24	compliant
2190	36.96725845	4.97	7.28	compliant
16QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				

2120	42.94	19.67	-	compliant
2155	42.78	18.97	-	compliant
2190	42.84	19.23	-	compliant
256QAM-Modulation ANT1				
2120	36.81506348	4.80	7.28	compliant
2155	36.69021606	4.67	7.26	compliant
2190	36.70217514	4.68	7.3	compliant
256QAM-Modulation ANT2				
2120	37.02101135	5.04	7.28	compliant
2155	36.77568817	4.76	7.26	compliant
2190	36.79615021	4.78	7.3	compliant
256QAM-Modulation ANT3				
2120	36.84512711	4.84	7.28	compliant
2155	36.75564957	4.74	7.26	compliant
2190	36.78461456	4.77	7.3	compliant
256QAM-Modulation ANT4				
2120	37.08037567	5.11	7.28	compliant
2155	36.82250595	4.81	7.26	compliant
2190	36.86377716	4.86	7.3	compliant
256QAM-Modulation ANT1+ANT2+ANT3+ANT4 Calculated Total				
2120	42.96	19.78	-	compliant
2155	42.78	18.98	-	compliant
2190	42.81	19.09	-	compliant

Table 7 RF Power Output (20 MHz Channel BW)

The base station maximum output power and PAPR were found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.