CERTIFICATE #: 0214.19

Class II Change Application for

Grant of Equipment Authorization

Nokia Solutions and Networks
Airscale Base Transceiver Station
AHFIB Remote Radio Head

FCC ID: VBNAHFIB-01
IC: 661W-AHFIB

Test Sites: Nokia Solutions and Networks
6000 Connection Drive
Irving, TX 75039 and
National Technical Systems – Plano
1701 E Plano Pkwy #150
Plano, TX 75074

NTS Plano FCC Laboratory Designation No.: US1077
NTS Plano ISED Laboratory Assigned Code: 4319A

Test Dates: December 13-14, 2018
Total Number of Pages: 89

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Revision History

Rev#	Date	Comments	Modified By
0	02/06/2019	Initial Draft	BreAnna Cheatham

CONTENTS

1 SCOPE/OBJECTIVE

A class II permissive change on the original filing is being pursued to add a single Narrow band IoT Guard Band (NB IoT GB here after) carrier to the AirScale AHFIB Base Station Remote Radio Head Federal Communication Commission and Industry Canada certifications. Please refer to the test report on the original certification (NTS Report PR072254 Rev 1 dated March 16, 2018) for details on all required testing. This filing covers LTE15+NBIOT-GB and LTE20+NBIOT-GB, which is separate, but in addition to the LTE10+NBIOT-GB already filed (NTS Report PR089138 Rev 0 dated October 26, 2018).

All conducted RF testing performed for the original certification testing has been repeated using NB IoT GB 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. 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.

Antenna port conducted RF measurements were taken with NTS personnel (Alex Mathews) at Nokia located at 6000 Connection Drive, Irving, Texas, on December 13-14, 2018. The base station and remote radio head software for this testing is an updated release that includes the single carrier NB IoT GB support for LTE15 and LTE20. The LTE and guard band modulation types were both QPSK for all testing herein. The test sample was selected and prepared by John Lopresti of Nokia Solutions and Networks.

Conducted Emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards:

ANSI C63.26-2015

FCC KDB 971168 DO1 v03r01

FCC KDB 662911 DO1 v02r01

STATEMENT OF COMPLIANCE

The tested sample of Nokia Solutions and Networks product AHFIB AirScale Base Station Remote Radio Head complied with the requirements of the standards and frequency bands declared in the scope of this test report.

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.

MEASUREMENT UNCERTAINTIES

Measurement uncertainties of the test facility based on a 95% confidence level are as follows:

Table 1. Measurement Uncertainties

Test	**Uncertainty**
Radio frequency	± 0.2ppm
RF power conducted	±1.2 dB
RF power radiated	±3.3 dB
RF power density conducted	±1.2 dB
Spurious emissions conducted	±1.2 dB
Adjacent channel power	±0.4 dB
Spurious emissions radiated	±4 dB
Temperature	±1°C
Humidity	±1.6 %
Voltage (DC)	±0.2 %
Voltage (AC)	±0.3 %

2 RESULT SUMMARY FOR THE CLASS II TESTING

2.1 FCC Part 24 (Base Stations Operating in the 1930 to 1995MHz Band)

The following tables provide a summary (Class II testing only) of the test results:

AHFIB Operating in 1930-1995MHz Band - LTE plus single NB IoT Guard Band carrier					
FCC	**IC**	**Description**	**Measured**	**Limit**	**Result(s)**
§24.229	RSS-133 Sec 6.1	Frequency Ranges	LTE15: 1937.5-1987.5 MHz LTE20: 1940.0-1985.0 MHz	1930.0 – 1995.0 MHz	Pass
§2.1047	RSS-133 Sec 6.2	Modulation Type	NB IoT Guard band (QPSK) with LTE15 & LTE20	Digital	Pass
§24.232	RSS-133 Sec 6.4	Output Power	Highest Conducted Power Output RMS: 45.85 dBm EIRP depends on antenna gain which is unknown	FCC: 1640W EIRP IC: 100W Conducted	Pass
§24.232	RSS-133 Sec 6.4	Peak to Average Ratio	Highest Measured PAPR: 8.11 dB	13dB	Pass
	RSS-133 Sec 2.3	99% Emission Bandwidth	LTE15: 13.828 MHz IC Emission Designator: **13M8F9W** LTE20: 18.313 MHz IC Emission Designator: **18M3F9W**	Remain in Block	Pass
§24.238		26dB down Emission Bandwidth	LTE15: 14.77 MHz FCC Emission Designator: **14M8F9W** LTE20: 19.74 MHz FCC Emission Designator: **19M7F9W**	Remain in Block	Pass
§24.238	RSS-133 Sec 6.5.1	Transmitter Spurious Emissions at the Antenna Terminal	< -19 dBm	-19 dBm per Transmit Chain	Pass[1]
Note 1: Based on 1MHz RBW. In the 1MHz immediately outside and adjacent to the frequency block a RBW of at least 1% of the emission bandwidth was used.					

2.2 FCC Part 27 Subpart C (Base Stations Operating in the 2110 to 2200MHz Band)

The following tables provide a summary (Class II testing only) of the test results:

AHFIB Operating in 2110-2200MHz Band - LTE plus single NB IoT Guard Band carrier					
FCC	**IC**	**Description**	**Measured**	**Limit**	**Result(s)**
§27.5(h)&(j)	RSS-139 Sec 6.1	Frequency Ranges	LTE15: 2117.5-2192.5 MHz LTE20: 2120.0-2190.0 MHz	2110.0 – 2200.0 MHz	Pass
§2.1033(c)(4)	RSS-139 Sec 6.2	Modulation Type	NB IoT Guard band (QPSK) with LTE15 & LTE20	Digital	Pass
§27.50(d)(2)	RSS-139 Sec 6.5	Output Power	Highest Conducted Power Output RMS: 45.80 dBm EIRP depends on antenna gain which is unknown	FCC: 1640W EIRP IC: 100W Conducted	Pass
§27.50(d)(5)	RSS-139 Sec 6.5	Peak to Average Ratio	Highest Measured PAPR: 8.12 dB	13dB	Pass
	RSS-Gen Sec 6.6	99% Emission Bandwidth	LTE15: 13.828 MHz IC Emission Designator: **13M8F9W** LTE20: 18.316 MHz IC Emission Designator: **18M3F9W**	Remain in Block	Pass
§27.53(h)(3)		26dB down Emission Bandwidth	LTE15: 14.78 MHz FCC Emission Designator: **14M8F9W** LTE20: 19.73 MHz FCC Emission Designator: **19M7F9W**	Remain in Block	Pass
§27.53(h)	RSS-139 Sec 6.6	Transmitter Spurious Emissions at the Antenna Terminal	< -19 dBm	-19 dBm per Transmit Chain	Pass
Note 1: Based on 1MHz RBW. In the 1MHz immediately outside and adjacent to the frequency block a RBW of at least 1% of the emission bandwidth was used.					

3 EUT HARDWARE

Company	Model	Description	Part/Serial Number	FCC ID/IC Number
Nokia Solutions and Networks	AHFIB	AirScale BTS RRH	Part Number: 474216A.101 Serial Number: K9174553644	FCC ID: VBNAHFIB-01 IC: 661W-AHFIB

4 TEST MEASUREMENT EQUIPMENT

Company	Type	Model	Serial Number	Last Cal	Cal Due
Keysight	Spectrum Analyzer	MXA N2090A	US46220313	02/16/17	02/16/19
Keysight	Spectrum Analyzer	PSA E4440A	MY44303970	10/18/17	10/18/19
R&S	Network Analyzer	ZVL	102098	02/11/18	02/11/19
R&S	Network Analyzer	ZVA	100240	7/11/2018	7/11/2019

5 AUXILLARY EQUIPMENT

Company	Description	Part/Serial Number	Serial Number
Aeroflex/Weinschel	Attenuator, 20 dB, 50 W	24-20-34	BH6436
Aeroflex/Weinschel	Attenuator, 20 dB, 100 W	48-20-33	BT3184
Weinschel	Attenuator, 20 dB, 150 W	57-20-33-LM	MC060
Microwave Circuits	Low Pass Filt. DC-1350MHz	L13502G1	2050-02 DC0229
Aeroflex/Weinschel	Attenuator, 6 dB, 50 W	24-6-24	BF7065

6 SUPPORT EQUIPMENT

Company	Model	Description	Part/Serial Number	FCC ID/IC Number
Nokia	ASIA + ABIA	AirScale System Module	ASIA Part Number: 473095A.101 ASIA Serial Number: 473095A ABIA Part Number: 473096A.102 ABIA Serial Number: L1162906771	N/A

7 EUT SOFTWARE

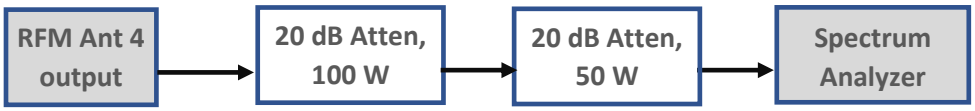
The base station and RF module software for this testing is an updated release that includes the NB IoT GB type as defined below.

(1) RFM Unit Software: FRM58.11.R09
(2) System Module Software: FL18A_ENB_0000_000623_0000

8 RF TEST SETUP DIAGRAMS

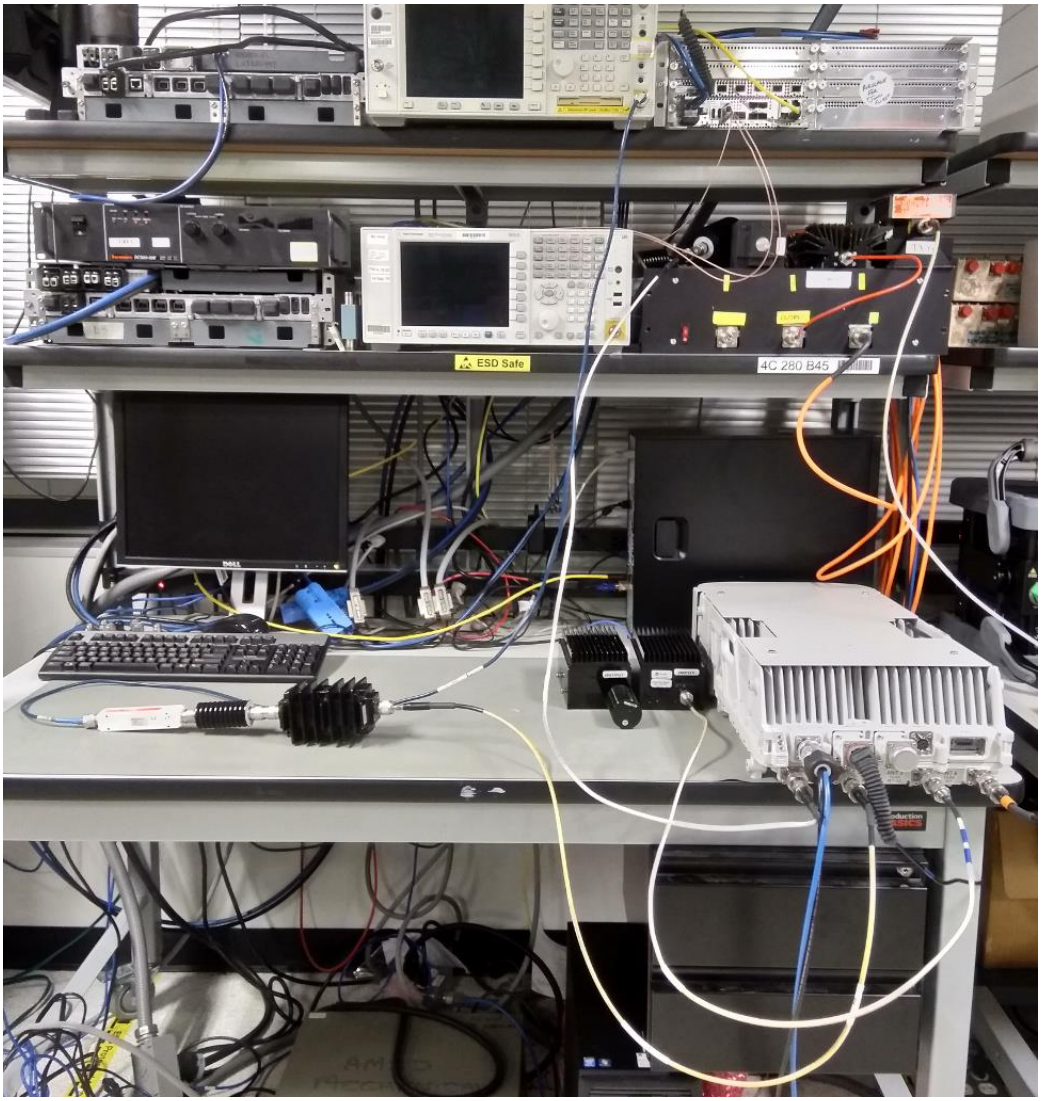
The following are the setups used in the RF conducted emissions testing.

Setup for 9kHz to 10MHz Measurements

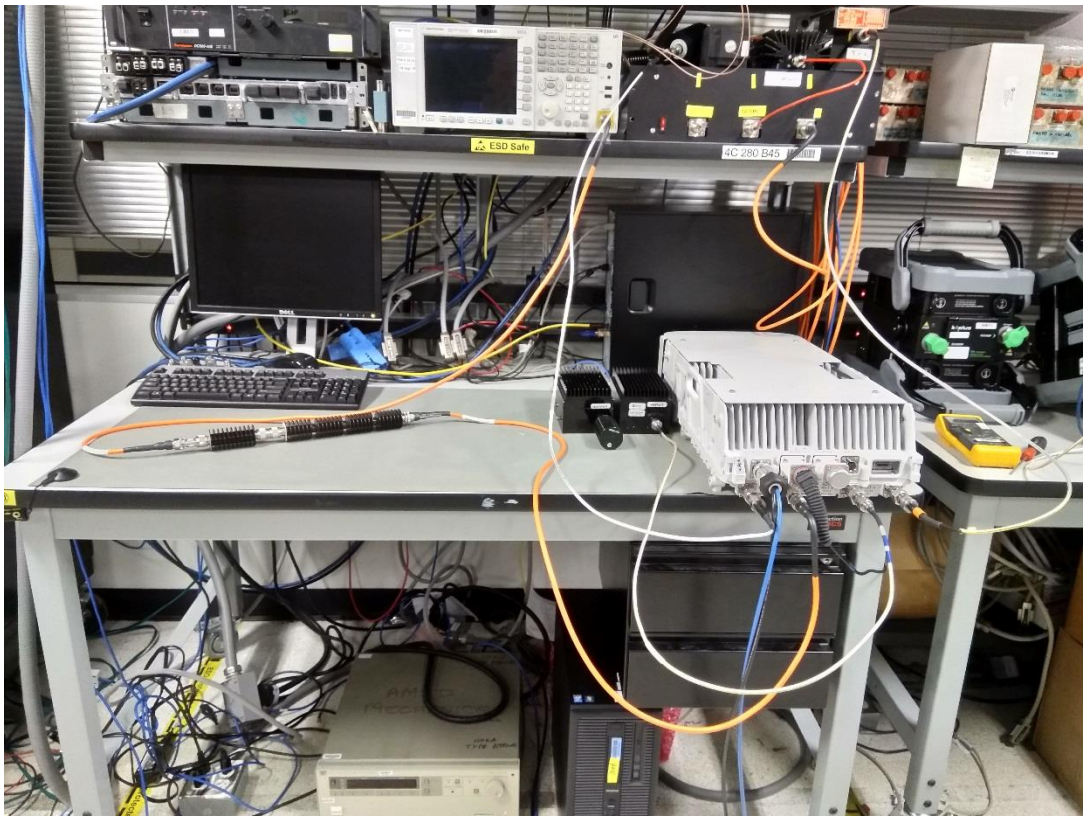


Setup for 10MHz to 22GHz Measurements

9 TEST SETUP PHOTOGRAPHS



9KHz to 10MHz Setup Photo



10 MHz to 22GHz Setup Photo

10 AHFIB LTE DOWNLINK BAND EDGE EARFCNS

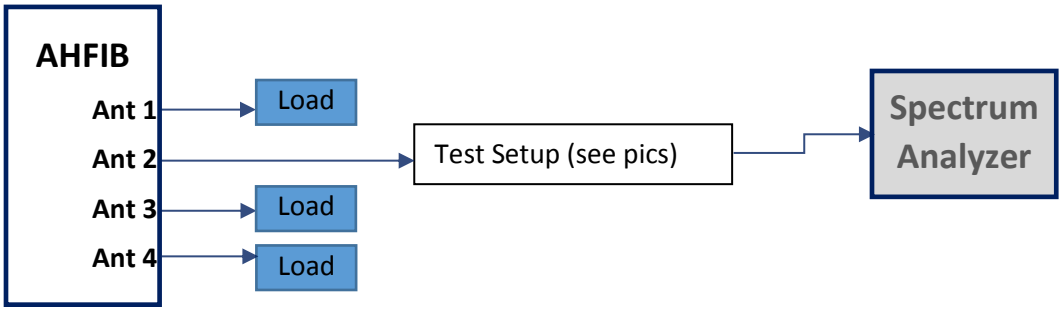
Band 25 (BTS Rx: 663 to 698 MHz/BTS Tx: 1930 to 1995 MHz) band edge downlink (BTS Transmit) EARFCNs for LTE channel bandwidths (5, 10, 15 and 20 MHz) are provided in following table. The EARFCN is defined as E-UTRA Absolute Radio Frequency Channel Number. The channel spacing is 100 kHz between channel numbers.

Band 25 Frequencies and Channels (Ant 1,2,3,4)					
Downlink EARFCN	Downlink Frequency (MHz)	LTE Channel Bandwidth			
		5 MHz	10 MHz	15 MHz	20 MHz
8040	1930.0	Band Edge	Band Edge	Band Edge	Band Edge
…					
8065	1932.5	Bottom Ch			
…					
8090	1935.0		Bottom Ch		
…					
8115	1937.5			Bottom Ch	
…					
8140	1940.0				Bottom Ch
…					
8365	1962.5	Middle Ch	Middle Ch	Middle Ch	Middle Ch
…					
8590	1985.0				Top Ch
…					
8615	1987.5			Top Ch	
…					
8640	1990		Top Ch		
…					
8665	1992.5	Top Ch			
…					
8690	1995.0	Band Edge	Band Edge	Band Edge	Band Edge

Band 66 Frequencies and Channels (Ant 1,2,3,4)					
Downlink EARFCN	Downlink Frequency (MHz)	LTE Channel Bandwidth			
		5 MHz	10 MHz	15 MHz	20 MHz
66436	2110.0	Band Edge	Band Edge	Band Edge	Band Edge
…					
66461	2112.5	Bottom Ch			
…					
66486	2115.0		Bottom Ch		
…					
66511	2117.5			Bottom Ch	
…					
66536	2120.0				Bottom Ch
…					
66886	2155.0	Middle Ch	Middle Ch	Middle Ch	Middle Ch
…					
67236	2190.0				Top Ch
…					
67261	2192.5			Top Ch	
…					
67286	2195.0		Top Ch		
…					
67311	2197.5	Top Ch			
…					
67335	2200.0	Band Edge	Band Edge	Band Edge	Band Edge

11 Testing

All conducted RF measurements for this test effort in this section were made at AHFIB antenna port 2 (same as the original filing and the port with the highest power). Antenna port measurements were taken with NTS personnel (Alex Mathews) at Nokia premises located at 6000 Connection Drive; Irving, Texas 75309. The general test setup used is provided below.



11.1 General Test Setup Used for AHFIB Testing

The output power, emission bandwidth, conducted spurious and conducted band edge measurements were performed with a spectrum analyzer. Measurements were made on the bottom, middle and top channels placing the NB IoT Guard Band carrier at the lower end of the carrier and then the upper end of the carrier for the LTE bandwidths of 15MHz, and 20MHz. BTS Software Release FL18A only supports NBIOT guardband signals for LTE10, LTE15 and LTE20 bandwidths. Since LTE10 + NBIOT-GB has already been filed, 15MHz and 20MHz were the only ones tested for this feature. As required in 3GPP TS 36.141 §6.1.4, the IOT carrier configured was given Cell ID 103.

12 TEST DATA FOR AHFIB Band 25 (1930-1995 MHz)

12.1 RF Output Power

Peak and average output power were measured (in accordance with KDB 971168 D01v03r01 and ANSI C63.26-2015) on AHFIB antenna port 2 on bottom, middle and top frequencies. Peak to average power ratio (PAPR) has been calculated as described in section 5.7.2 of KDB971168 D01 v03r01. The results of the power measurements and PAPR calculations are provided in the tables below.

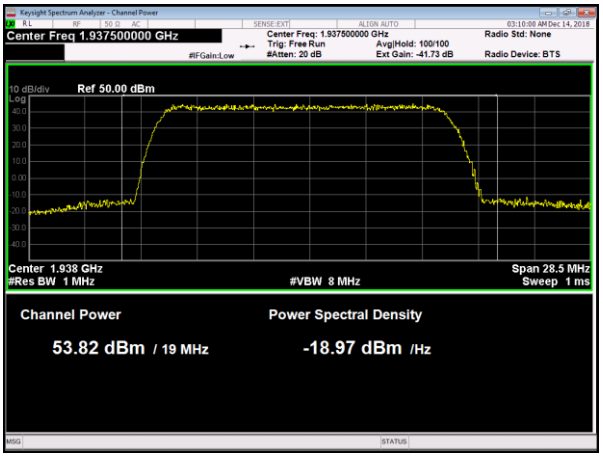
RF Output Power Band 25 NB IoT Lower Guard Band Carrier				
AHFIB Ant port 2	LTE Bandwidth	LTE - Aggregate w/NB IoT GB		
		Peak (dBm)	Average (dBm)	PAPR (dB)
Bottom Channel	LTE15	53.82	45.83	7.99
	LTE20	53.92	45.83	8.09
Middle Channel	LTE15	53.66	45.59	8.07
	LTE20	53.66	45.55	8.11
Top Channel	LTE15	53.61	45.62	7.99
	LTE20	53.68	45.68	8.00

RF Output Power Band 25 NB IoT Upper Guard Band Carrier				
AHFIB Ant port 2	LTE Bandwidth	LTE - Aggregate w/NB IoT GB		
		Peak (dBm)	Average (dBm)	PAPR (dB)
Bottom Channel	LTE15	53.90	45.84	8.06
	LTE20	53.92	45.85	8.07
Middle Channel	LTE15	53.59	45.65	7.94
	LTE20	53.61	45.66	7.95
Top Channel	LTE15	53.65	45.65	8.00
	LTE20	53.75	45.70	8.05

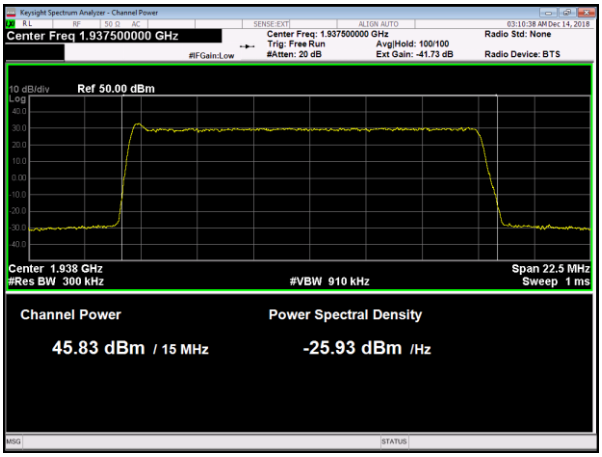
All measurement results are provided in the following pages. The total measurement RF path loss of the test setup (attenuator and test cables) was 41.73 dB and is accounted for by the spectrum analyzer external gain offset.

Channel Power Plots, NB IoT Lower GB Carrier (15MHz):

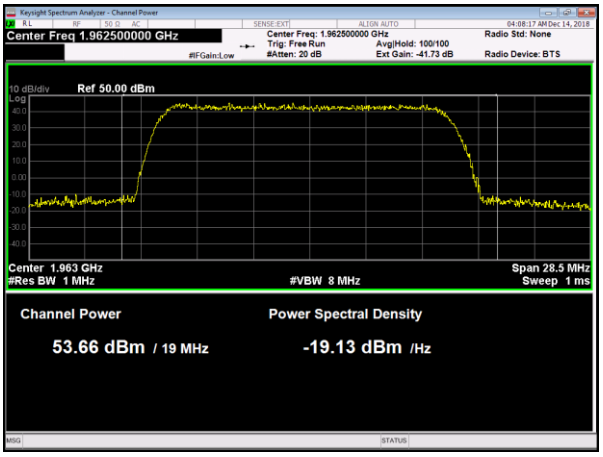
LTE15 Bottom Channel Peak Power



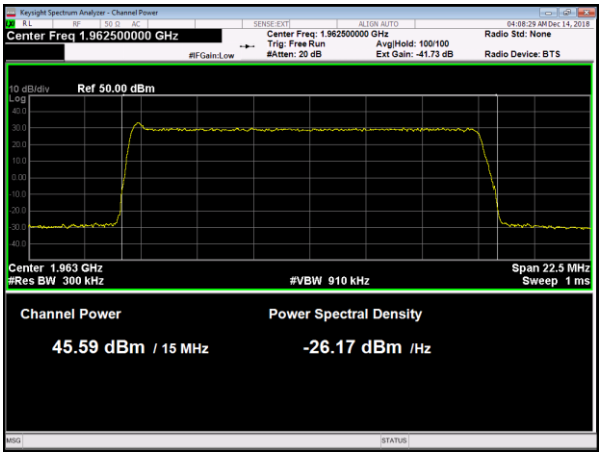
LTE15 Bottom Channel Average Power



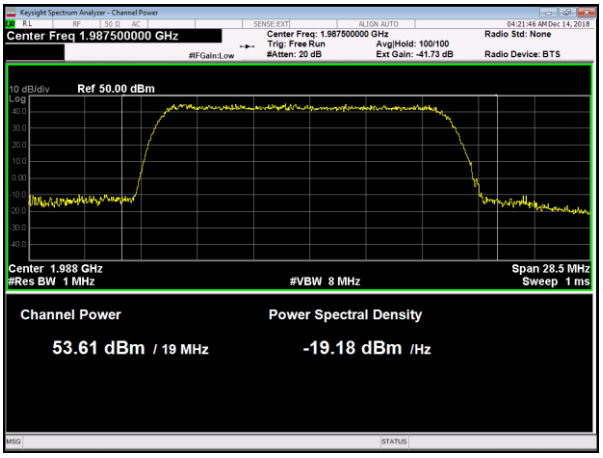
LTE15 Middle Channel Peak Power



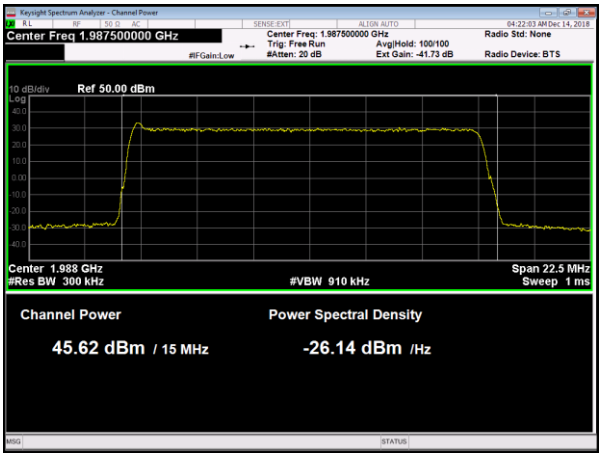
LTE15 Middle Channel Average Power



LTE15 Top Channel Peak Power

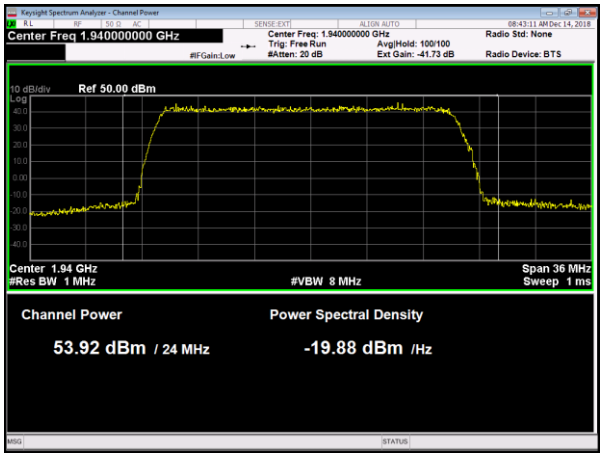


LTE15 Top Channel Average Power

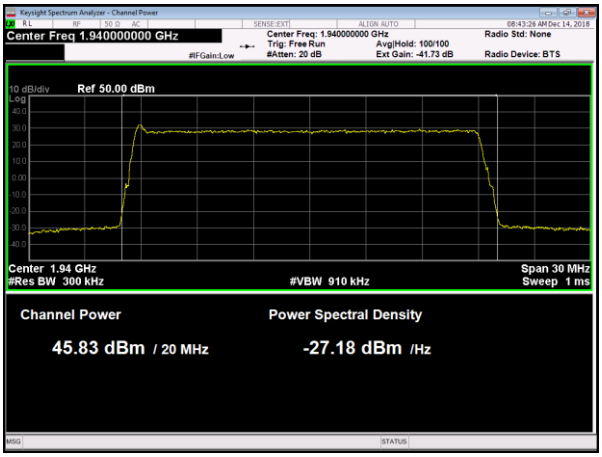


Channel Power Plots, NB IoT Lower GB Carrier (20MHz):

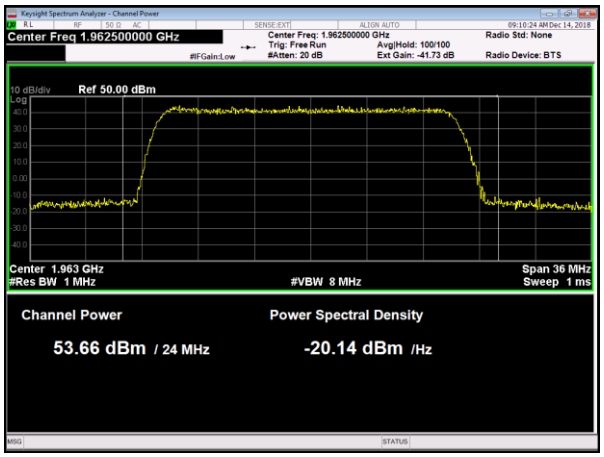
LTE20 Bottom Channel Peak Power



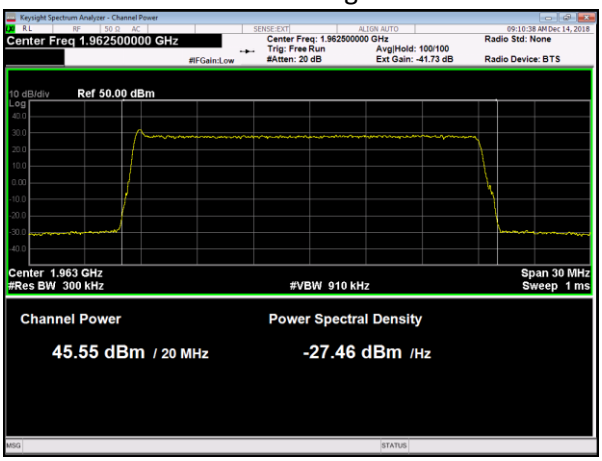
LTE20 Bottom Channel Average Power



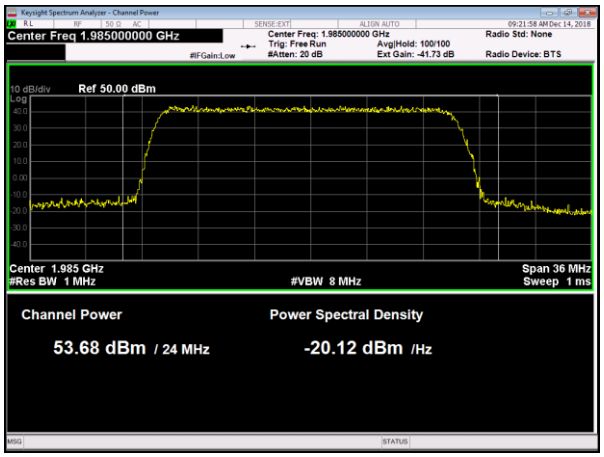
LTE20 Middle Channel Peak Power



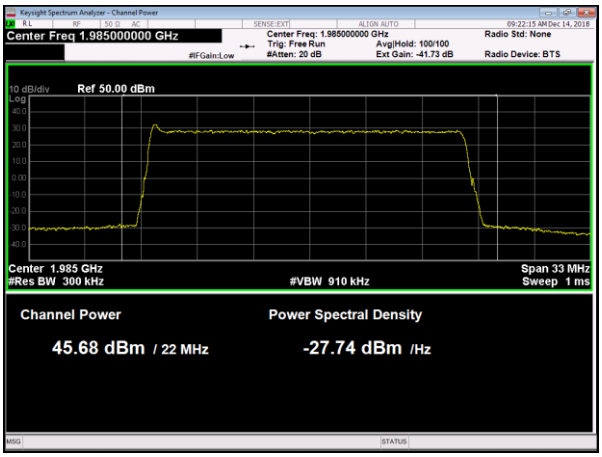
LTE20 Middle Channel Average Power



LTE20 Top Channel Peak Power

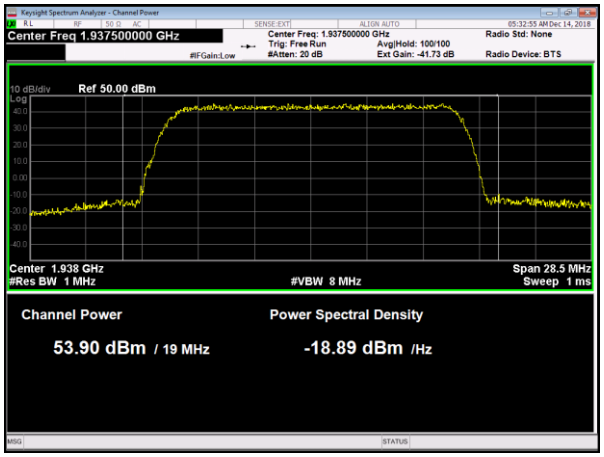


LTE20 Top Channel Average Power

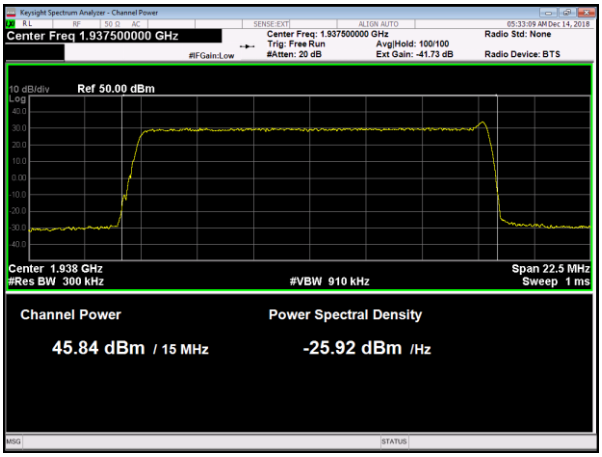


Channel Power Plots, NB IoT Upper GB Carrier (15MHz):

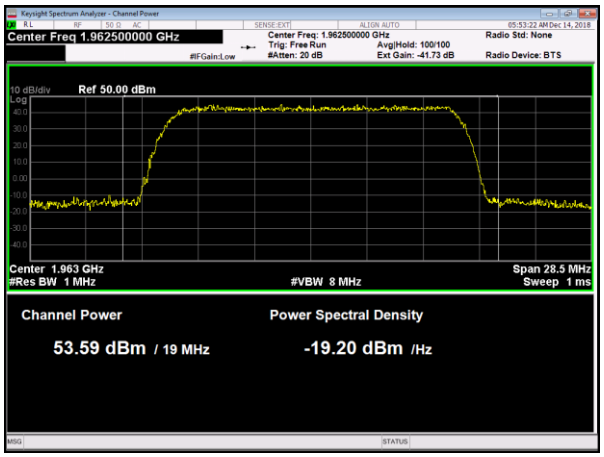
LTE15 Bottom Channel Peak Power



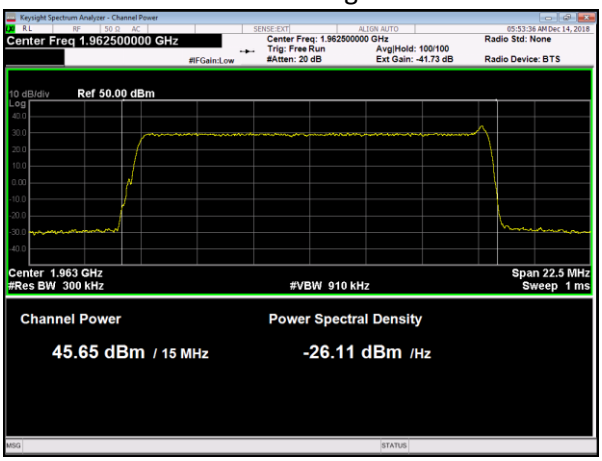
LTE15 Bottom Channel Average Power



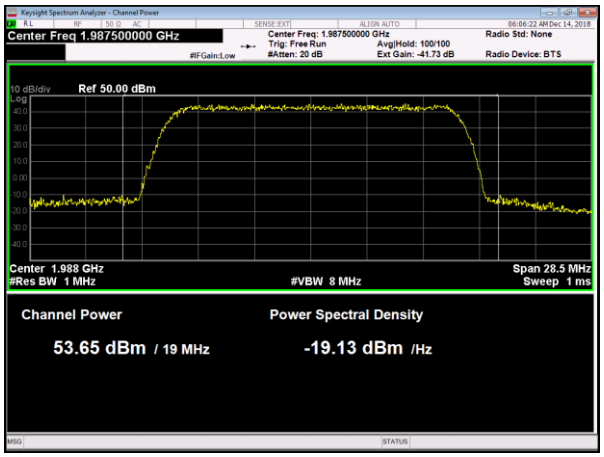
LTE15 Middle Channel Peak Power



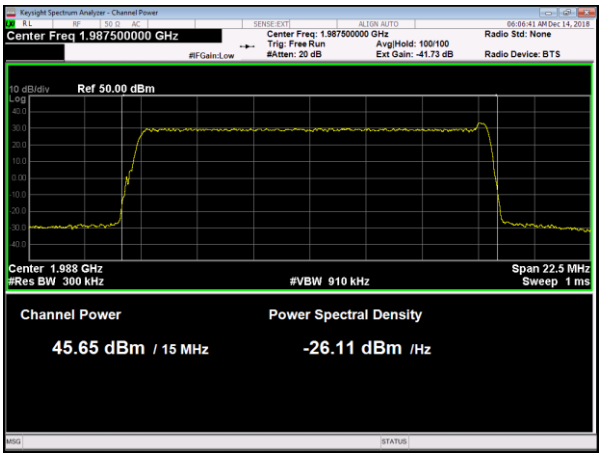
LTE15 Middle Channel Average Power



LTE15 Top Channel Peak Power

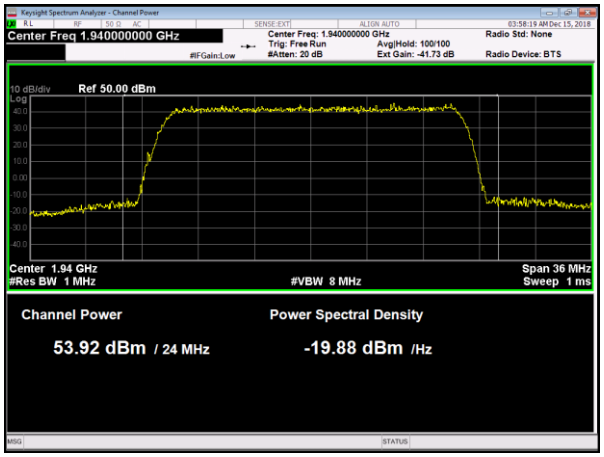


LTE15 Top Channel Average Power

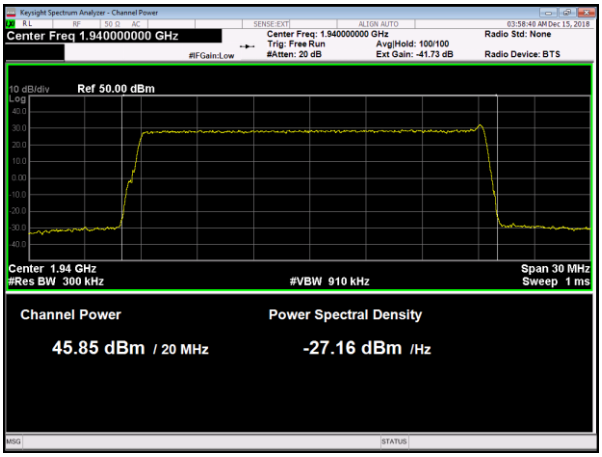


Channel Power Plots, NB IoT Upper GB Carrier (20MHz):

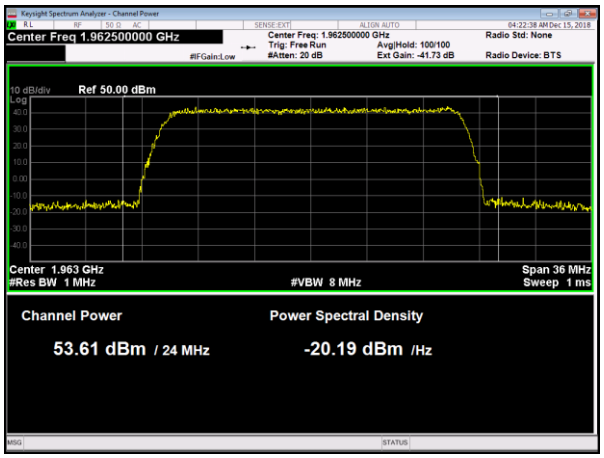
LTE20 Bottom Channel Peak Power



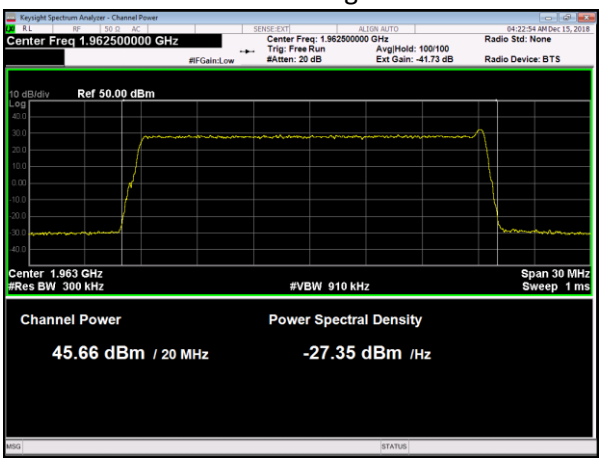
LTE20 Bottom Channel Average Power



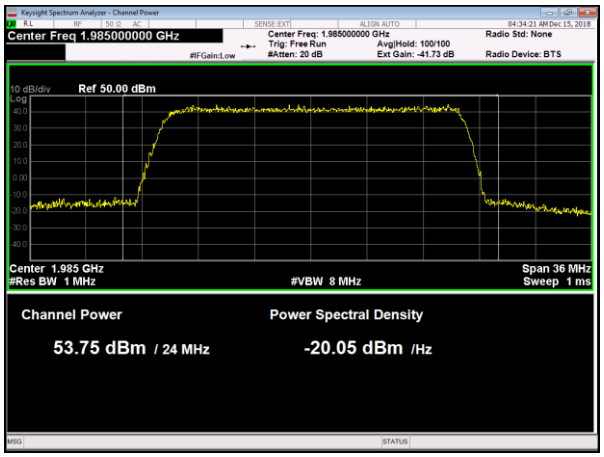
LTE20 Middle Channel Peak Power



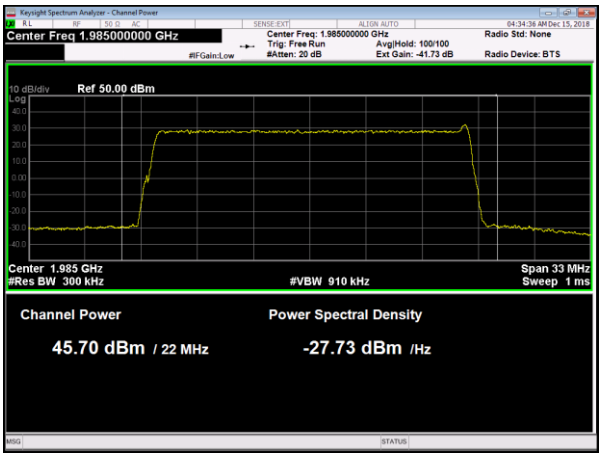
LTE20 Middle Channel Average Power



LTE20 Top Channel Peak Power



LTE20 Top Channel Average Power



12.2 Emission Bandwidth (26 dB down and 99%)

Emission bandwidth measurements were made at antenna port 2 on the bottom, middle and top channels with maximum RF output power. The results are provided in the following table.

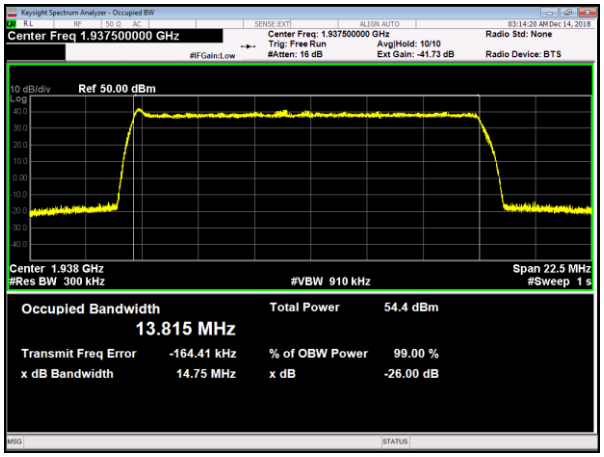
LTE Bandwidth	Emission Bandwidth Band 25 NB IoT GB (Lower)					
	Bottom Channel		Middle Channel		Top Channel	
	26dB(MHz)	99% (MHz)	26dB(MHz)	99% (MHz)	26dB(MHz)	99% (MHz)
15MHz	14.75	13.815	14.77	13.817	14.77	13.807
20MHz	19.74	18.306	19.73	18.313	19.71	18.308

LTE Bandwidth	Emission Bandwidth Band 25 NB IoT GB (Upper)					
	Bottom Channel		Middle Channel		Top Channel	
	26dB(MHz)	99% (MHz)	26dB(MHz)	99% (MHz)	26dB(MHz)	99% (MHz)
15MHz	14.73	13.821	14.75	13.828	14.73	13.827
20MHz	19.68	18.298	19.70	18.312	19.72	18.310

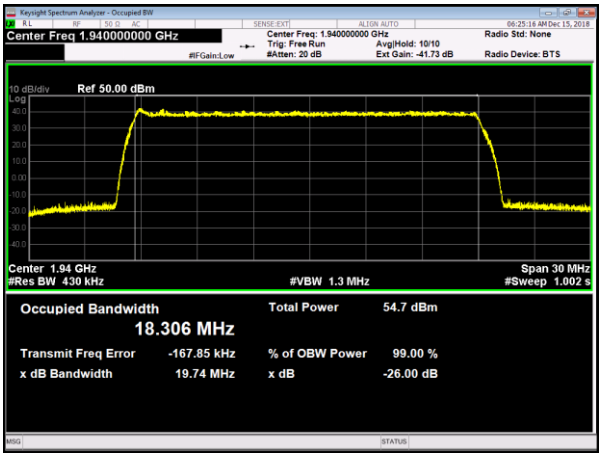
Emission bandwidth measurement data are provided in the following pages.

Plots for LTE15 and LTE20 Bandwidths + NB-IoT-GB in the Lower Guard Band:

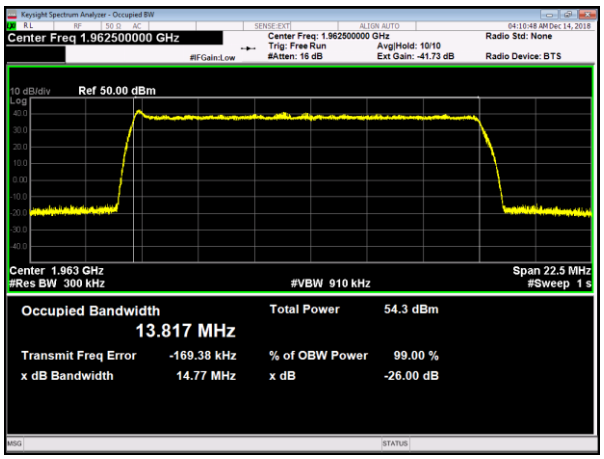
LTE15 Bottom Channel



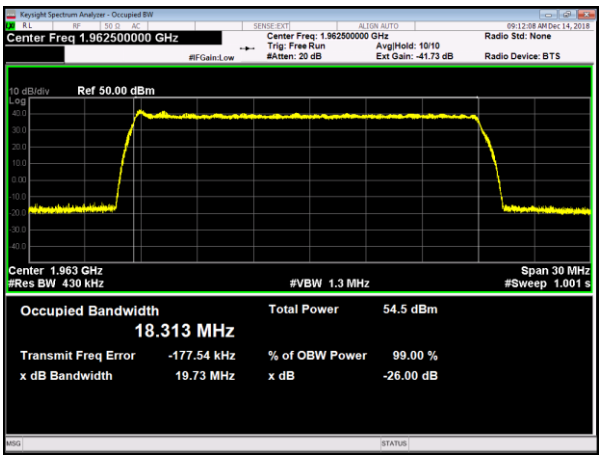
LTE20 Bottom Channel



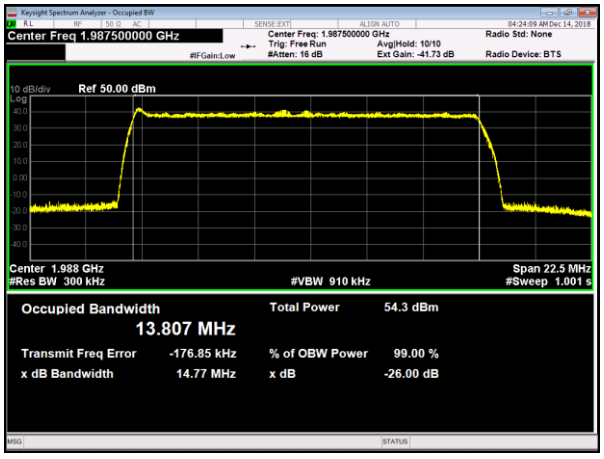
LTE15 Middle Channel



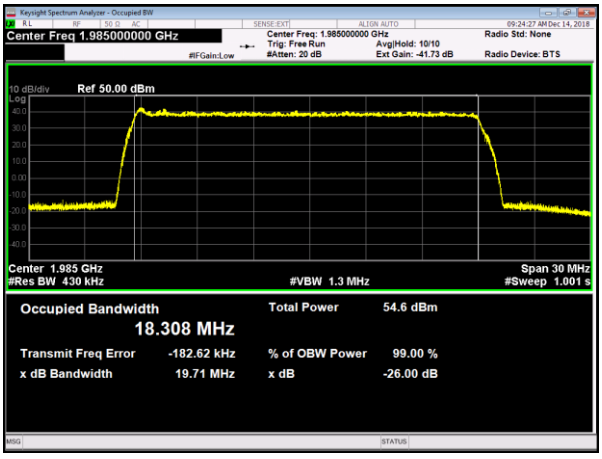
LTE20 Middle Channel



LTE15 Top Channel

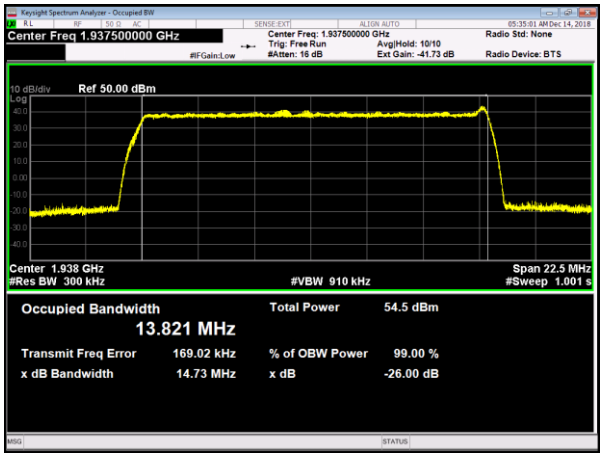


LTE20 Top Channel

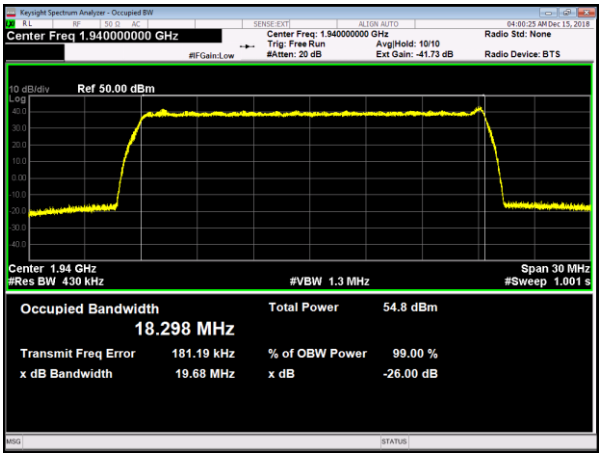


Plots for LTE15 and LTE20 Bandwidth + NB-IoT-GB in the Upper Guard Band:

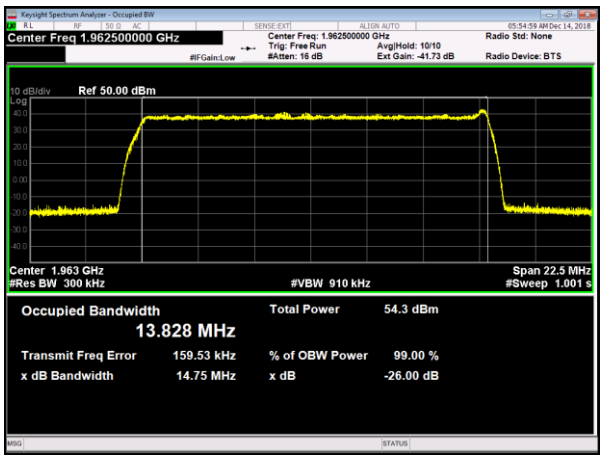
LTE15 Bottom Channel



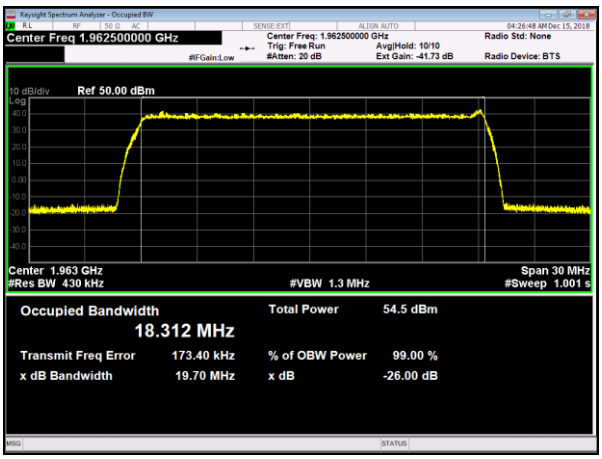
LTE20 Bottom Channel



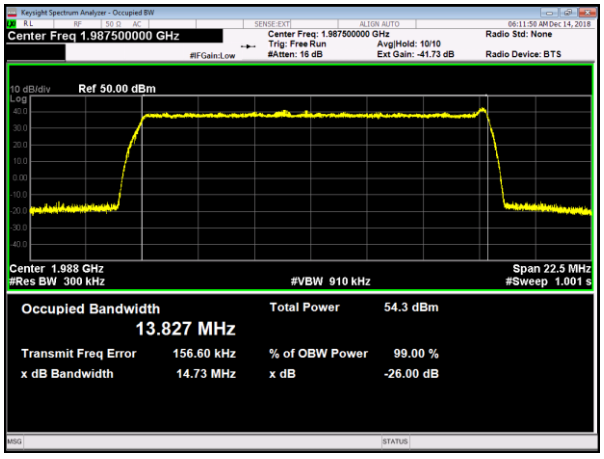
LTE15 Middle Channel



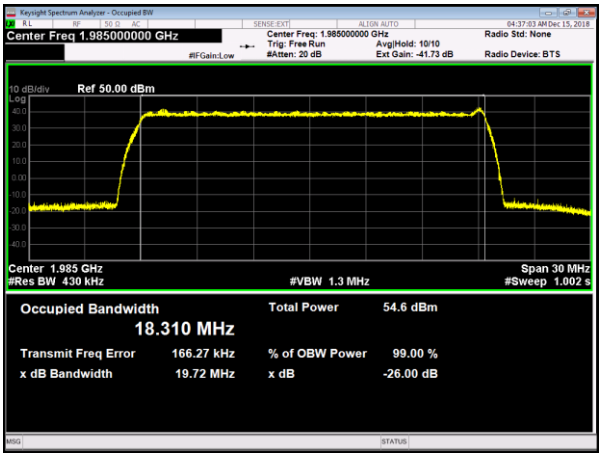
LTE20 Middle Channel



LTE15 Top Channel



LTE20 Top Channel



12.3 Antenna Port Conducted Band Edge

Conducted band edge measurements were made at AHFIB RRH antenna port 2. The AHFIB was operated at the band edge frequencies with a single NB IoT GB carrier for 10MHz, 15MHz and 20MHz LTE bandwidths.

The same limit of -19dBm used in the original certification testing is used for this testing. The limit of -13dBm is adjusted to -19dBm [-13dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

Measurements were performed with the spectrum analyzer in the RMS average mode over 100 traces. In the 2 to 5MHz frequency range outside the band edge (i.e.: 1925 to 1928MHz and 1997 to 2000MHz bands) a 1MHz RBW and 3MHz VBW was used. In the 1MHz bands outside and adjacent to the frequency block, a resolution bandwidth of 1% of the emission bandwidth was used. In the 1 to 2MHz frequency range outside the band edge (i.e.: 1928 to 1929MHz and 1996 to 1997MHz bands) the RBW was again reduced to 1% of the emission bandwidth and the power integrated over 1MHz.

The total measurement RF path loss of the test setup (attenuator and test cables) was 41.73 dB and is accounted for by the spectrum analyzer external gain offset.

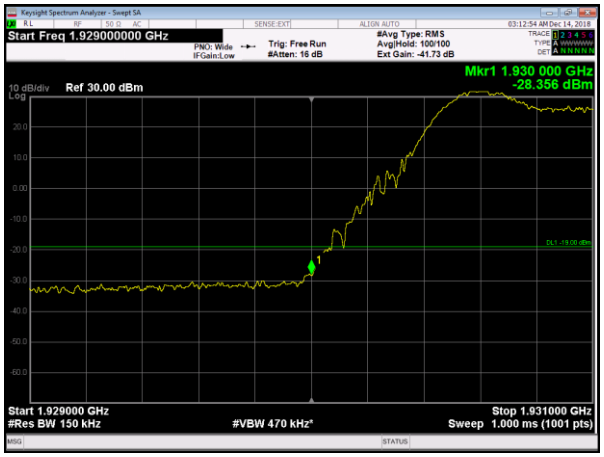
The results are summarized in the following table. The highest (worst case) emissions from the measurement data are provided.

LTE BW	NB IoT Guardband Placement	Bottom Channel (dBm)	Top Channel (dBm)
15 MHz	Lower	-24.635	-24.146
15 MHz	Upper	-24.725	-23.695
20 MHz	Lower	-25.318	-24.475
20 MHz	Upper	-25.586	-23.860

Conducted band edge measurements are provided in the following pages. Captions are marked with LBE for lower band edge and UBE for upper band edge.

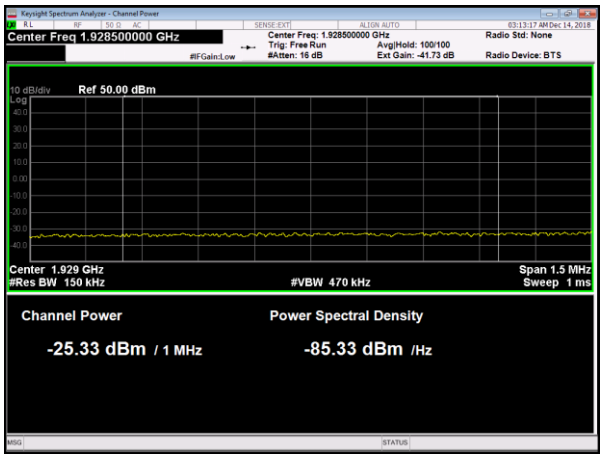
LTE15 + Lower NB IoT GB Carrier Band Edge Plots:

LTE15 Bottom Channel LBE 1929MHz to 1931MHz

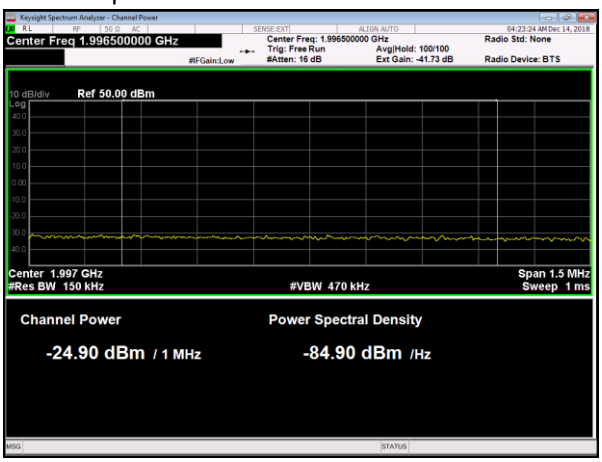


LTE15 Top Channel UBE 1994MHz to 1996MHz

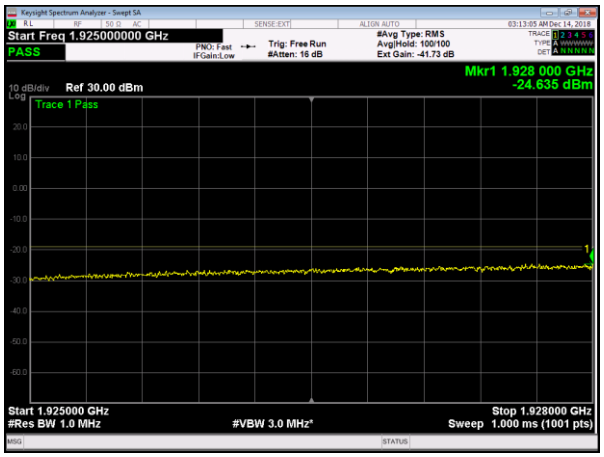
LTE15 Bottom Channel LBE 1928MHz to 1929MHz



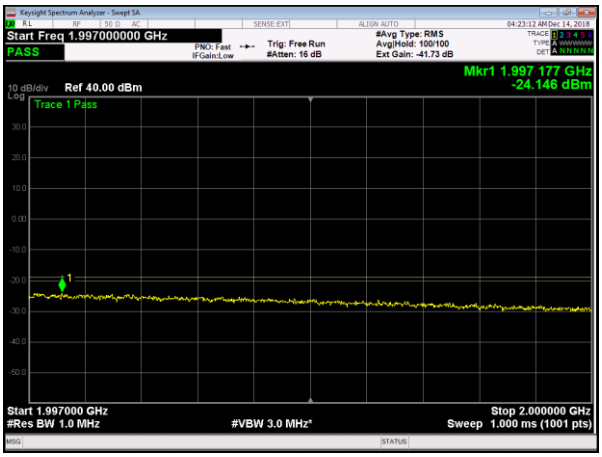
LTE15 Top Channel UBE 1996MHz to 1997MHz



LTE15 Bottom Channel LBE 1925MHz to 1928MHz

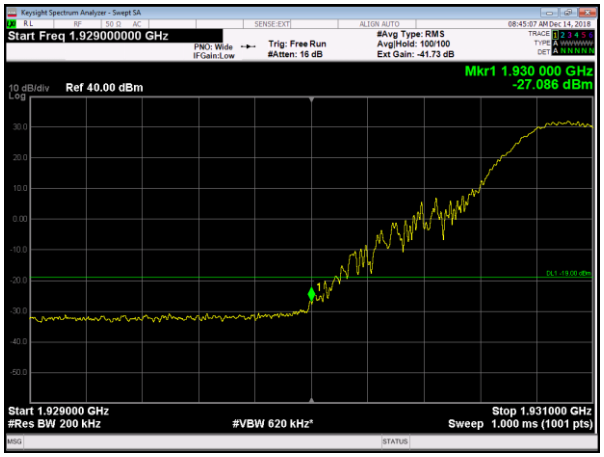


LTE15 Top Channel UBE 1997MHz to 2000MHz

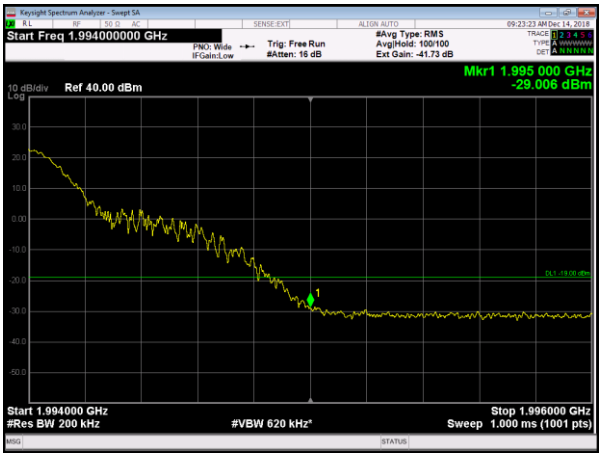


LTE20 + Lower NB IoT GB Carrier Band Edge Plots:

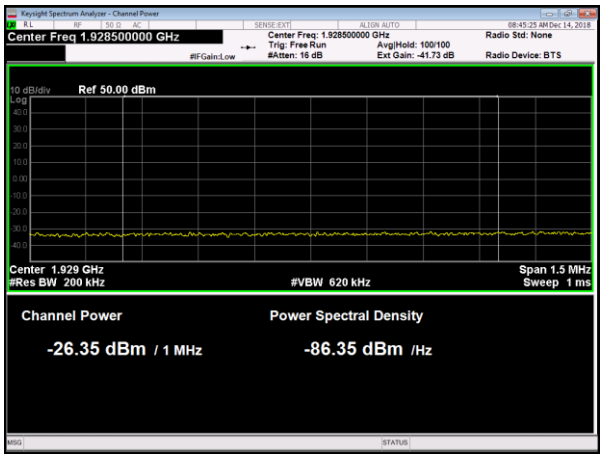
LTE20 Bottom Channel LBE 1929MHz to 1931MHz



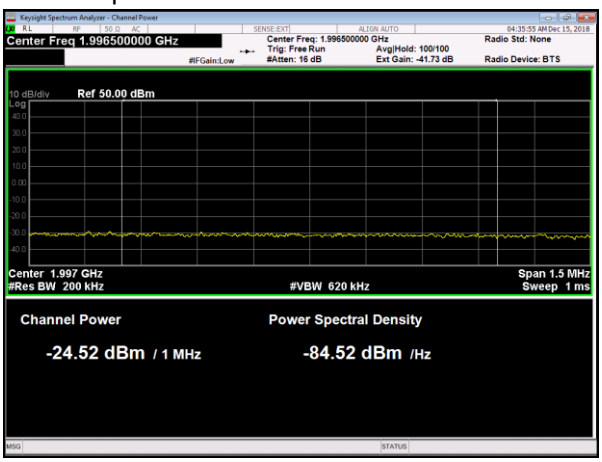
LTE20 Top Channel UBE 1994MHz to 1996MHz



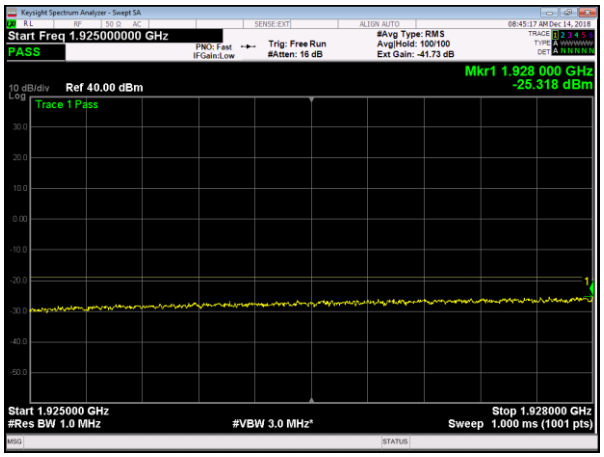
LTE20 Bottom Channel LBE 1928MHz to 1929MHz



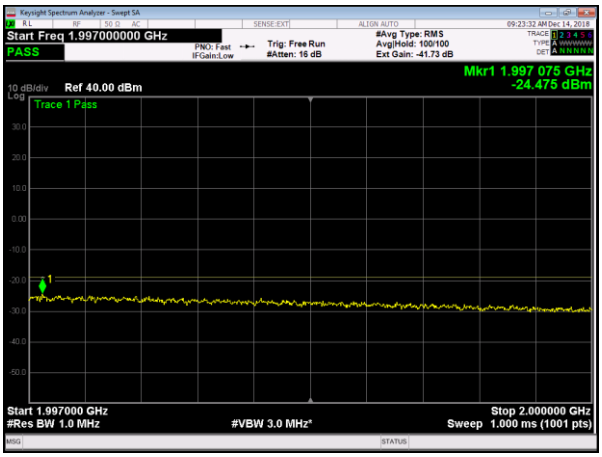
LTE20 Top Channel UBE 1996MHz to 1997MHz



LTE20 Bottom Channel LBE 1925MHz to 1928MHz

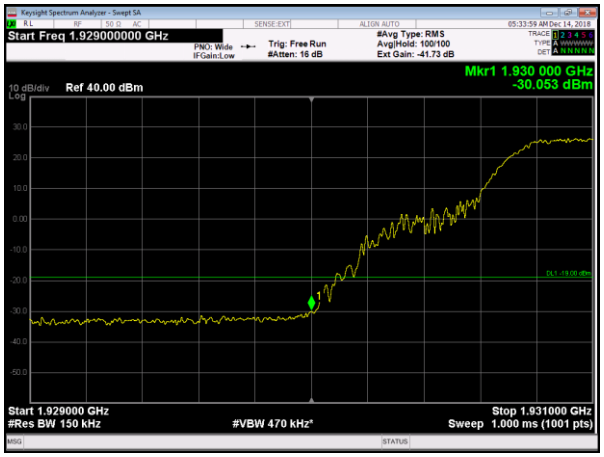


LTE20 Top Channel UBE 1997MHz to 2000MHz

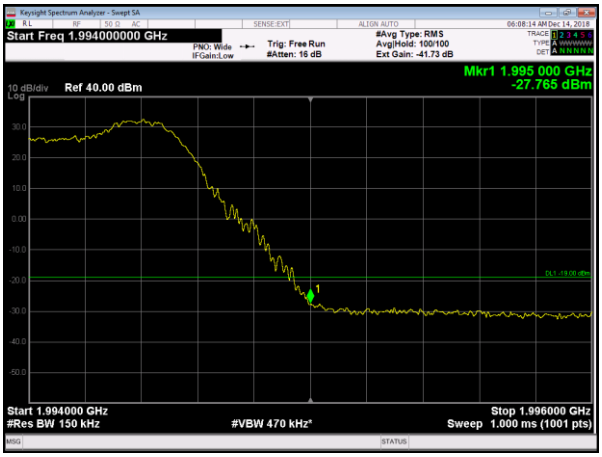


LTE15 + Upper NB IoT GB Carrier Band Edge Plots:

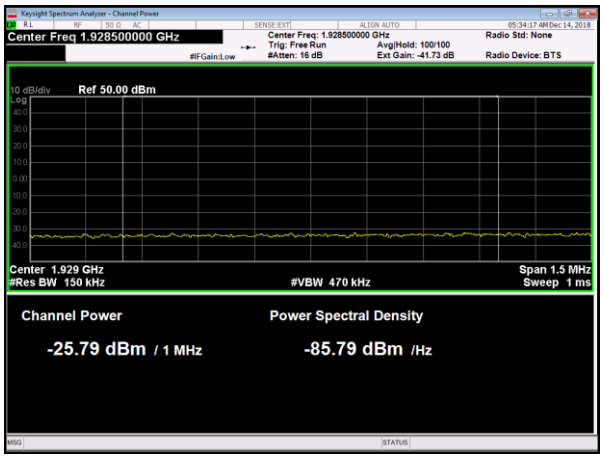
LTE15 Bottom Channel LBE 1929MHz to 1931MHz



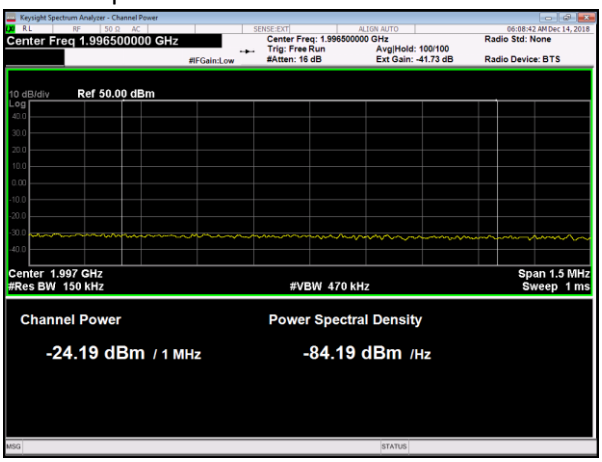
LTE15 Top Channel UBE 1994MHz to 1996MHz



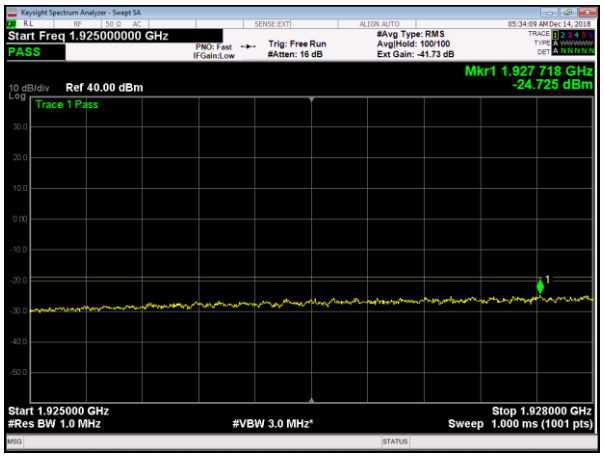
LTE15 Bottom Channel LBE 1928MHz to 1929MHz



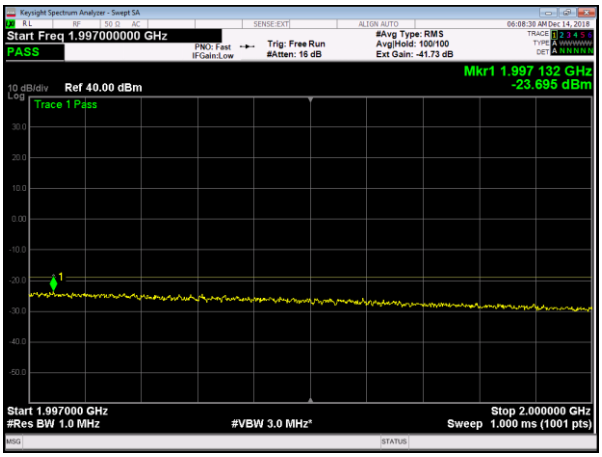
LTE15 Top Channel UBE 1996MHz to 1997MHz



LTE15 Bottom Channel LBE 1925MHz to 1928MHz

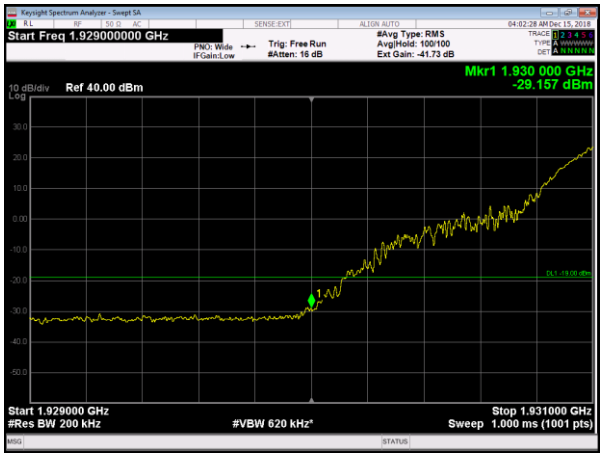


LTE15 Top Channel UBE 1997MHz to 2000MHz

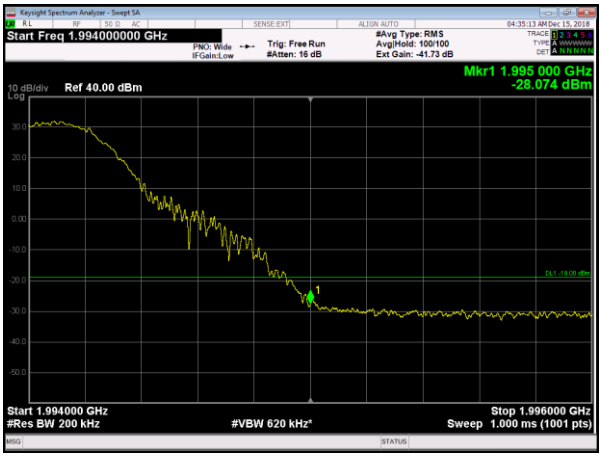


LTE20 + Upper NB IoT GB Carrier Band Edge Plots:

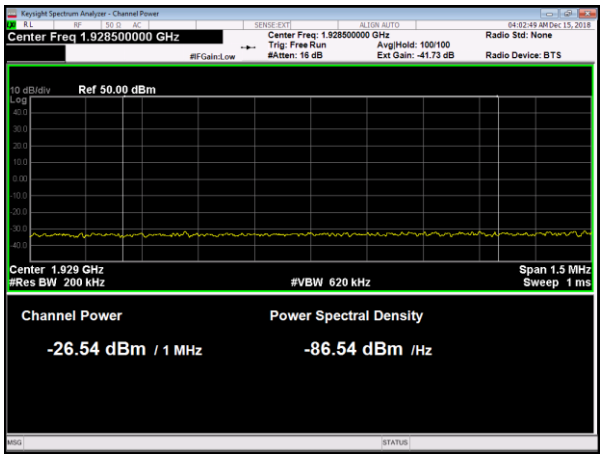
LTE20 Bottom Channel LBE 1929MHz to 1931MHz



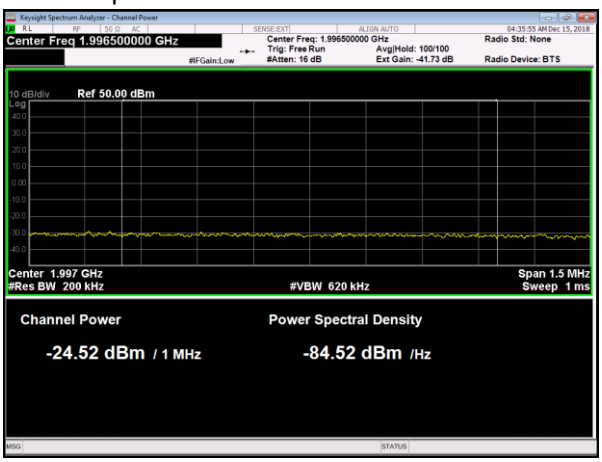
LTE20 Top Channel UBE 1994MHz to 1996MHz



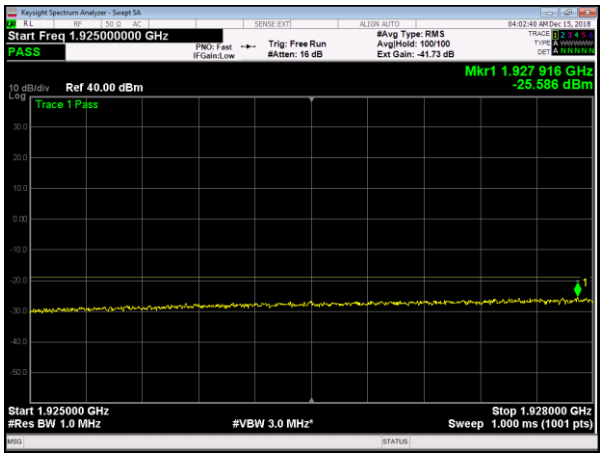
LTE20 Bottom Channel LBE 1928MHz to 1929MHz



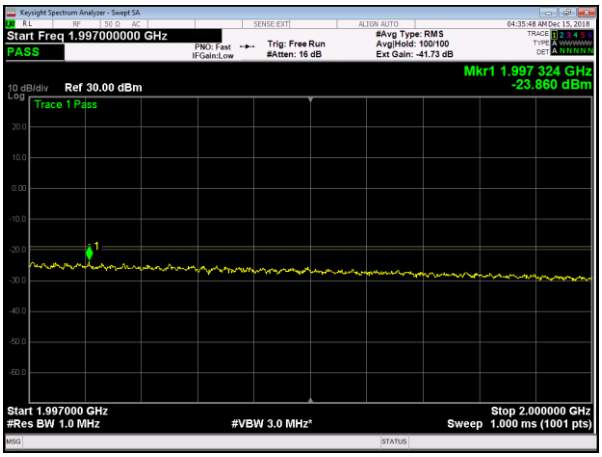
LTE20 Top Channel UBE 1996MHz to 1997MHz



LTE20 Bottom Channel LBE 1925MHz to 1928MHz



LTE20 Top Channel UBE 1997MHz to 2000MHz



12.4 Transmitter Antenna Port Conducted Emissions

Transmitter conducted spurious emissions measurement were made at AHFIB RRH antenna port 2 across the range 9 kHz-22GHz. The AHFIB was operated on bottom, middle and top channels with a single NB IoT GB carrier with LTE bandwidths of 15MHz and 20MHz at maximum port power. The Keysight PSA E4440A was used to measure frequencies below 10MHz because of the lower noise floor in that frequency range, and the MXA N2090A was used to measure from 10MHz to 22GHz. The total measurement RF path loss of the test setup (attenuators, high pass filter and test cables) was accounted for by the spectrum analyzer reference level offset (see table below).

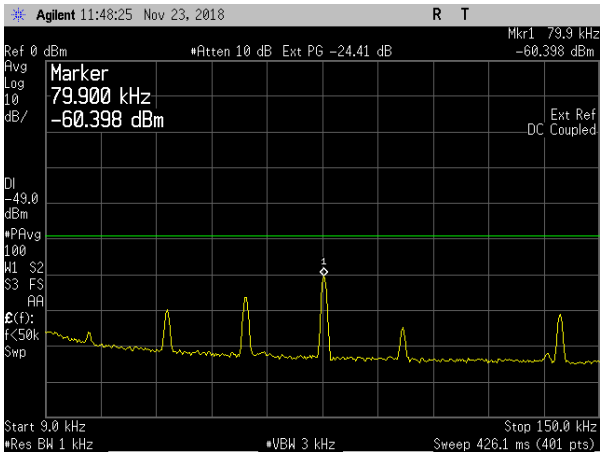
The same limit of -13dBm used in the original certification testing is used for this testing. The limit is adjusted to -19dBm [-13dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

Frequency Range	RBW (KHz)	VBW (KHz)	Detector/Avg Type	Sweep Time	Path Loss (dB)
9KHz to 150KHz	1	3	RMS Avg	Auto	24.41
150KHz to 10MHz	100	300	RMS Avg	Auto	24.41
10-100 MHz	1000	3000	Peak/Max	Auto	39.38
100-1910 MHz	1000	3000	Peak/Max	Auto	39.84
1910-2220 MHz	1000	3000	RMS Avg	Auto	41.73
2220MHz to 6.2GHz	1000	3000	Peak/Max	Auto	41.87
6.2GHz to 10GHz	1000	3000	Peak/Max	Auto	42.76
10GHz to 14GHz	1000	3000	Peak/Max	Auto	42.89
14GHz to 18GHz	1000	3000	RMS Avg	Auto	45.04
18 GHz to 22GHz	1000	3000	RMS Avg	Auto	45.71

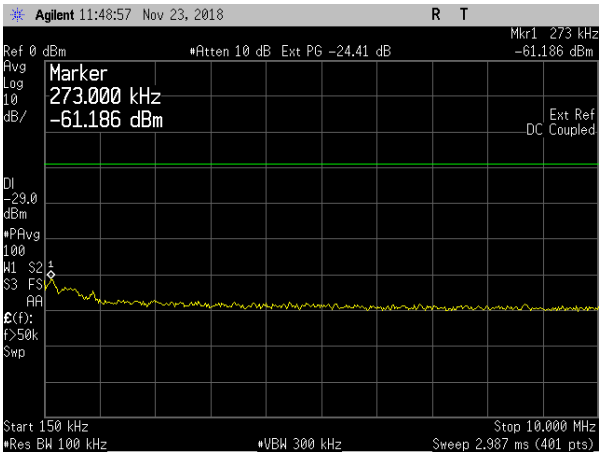
Conducted spurious emission plots/measurements are provided in the following pages.

LTE15 Bottom Channel (1937.5) NB IoT at lower Guard Band:

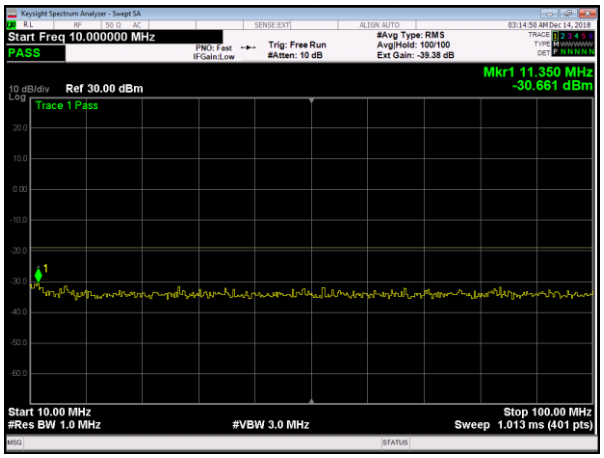
LTE15 Bottom+NB IoT GB (Lower) 9-150KHz



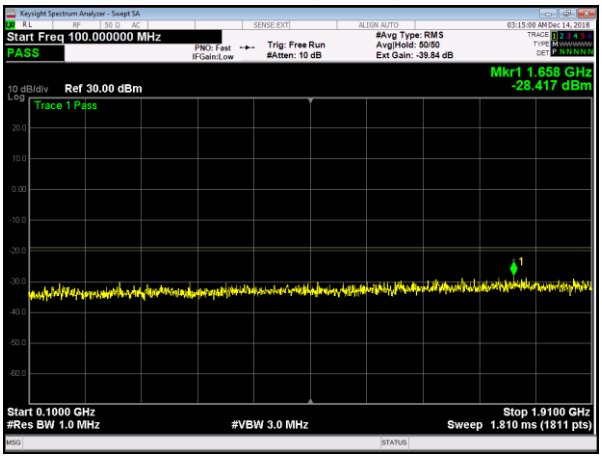
LTE15 Bottom+NB IoT GB (Lower) 150 KHz-10MHz



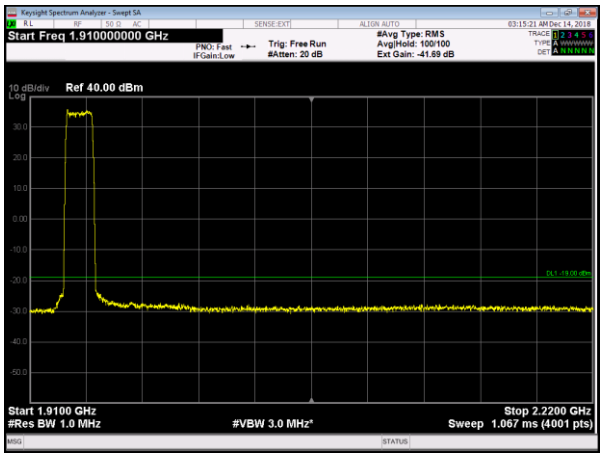
LTE15 Bottom+NB IoT GB (Lower) 10MHz-100MHz



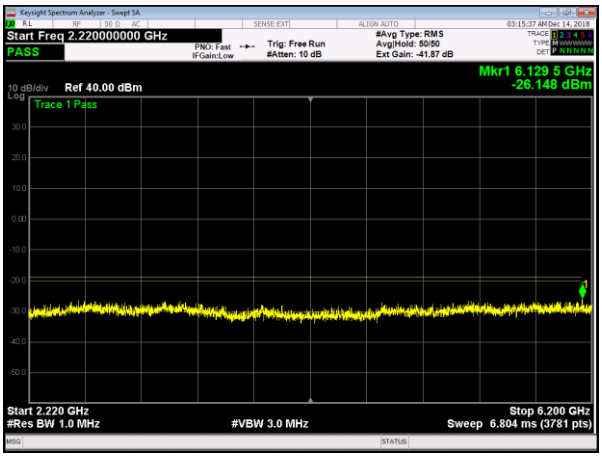
LTE15 Bottom+NB IoT GB (Lower) 100MHz-1910MHz



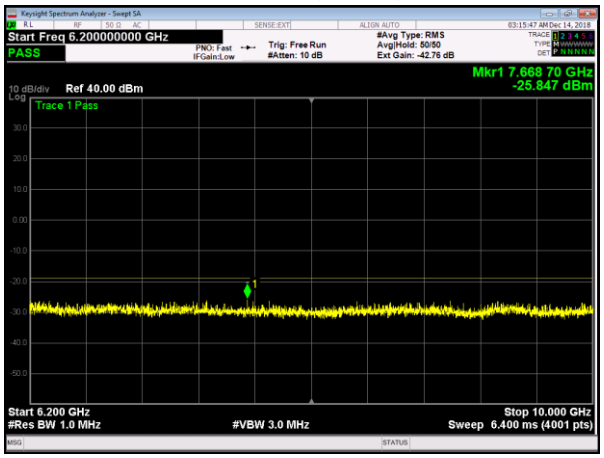
LTE15 Bottom+NB IoT GB (Lower) 1910MHz-2220MHz



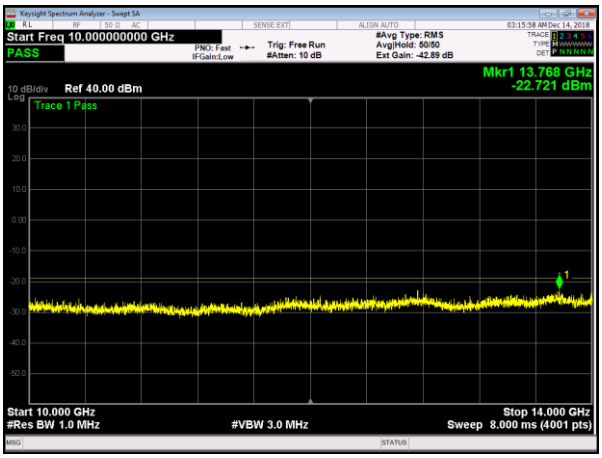
LTE15 Bottom+NB IoT GB (Lower) 2220MHz-6.2GHz



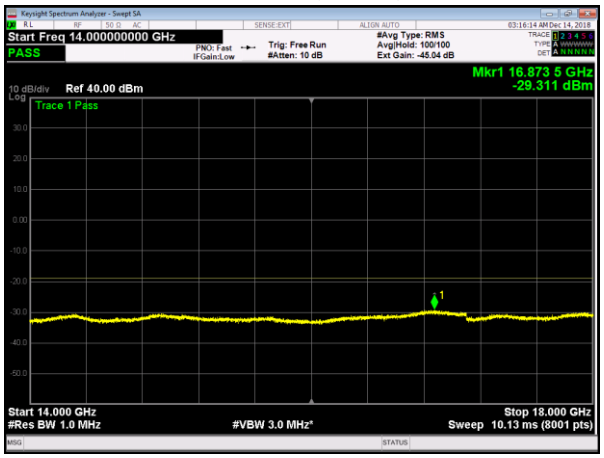
LTE15 Bottom+NB IoT GB (Lower) 6.2GHz-10GHz



LTE15 Bottom+NB IoT GB (Lower) 10GHz-14GHz



LTE15 Bottom+NB IoT GB (Lower) 14GHz-18GHz



LTE15 Bottom+NB IoT GB (Lower) 18GHz-22GHz