

XMit 2020.03.25.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	27-Feb-20	27-Feb-21
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20

TEST DESCRIPTION

The antenna port spurious emissions were measured at the RF output terminal of the EUT through 4 different attenuation configurations which continues through to the RF input of the spectrum analyzer. Analyzer plots utilizing a resolution bandwidth called out by the client's test plan were made for each modulation type from 9 KHz to 22 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than the limits also called out by the client's test plan shown below.

The measurement methods are detailed in KDB971168 D01v03 section 6 and ANSI C63.26-2015.

Per FCC 2.1057(a)(1), the upper level of measurement is the 10th harmonic of the highest fundamental frequency.

These measurements are for frequency band after the first 1.0 MHz bands immediately outside and adjacent to the frequency block.

Per section FCC 24.238(a), the power of any emission outside of the authorized operating frequency range cannot exceed - 13 dBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

The limit for the 9kHz to 150kHz frequency range was adjusted to –49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to –39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: - 39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (AHFIG) as the original certification test. The AHFIG antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the original certification testing) and antenna port 4 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraph 5.7.2i.

Carrier bandwidths of 10, 15, & 20MHz were verified using NB IoT GB carriers under this effort. The LTE modulation type for this testing was set up according to 3GPP TS 36.141 E-UTRA Test Models and is "E-TM 1.1 (QPSK modulation type) with N-TM (narrow band IoT)".

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						TbtTx 2020.06.08.0 BETA	XMit 2020
EUT: A					Work Order:		
Serial Number: K	ber: K9191322351 mer: Nokia Solutions and Networks ees: Mitchell Hill, John Rattanavong				Date:	23-Jun-20	
Customer: N					Temperature:		
Attendees: M					Humidity:	51.7% RH	
Project: N	one				Barometric Pres.:		
Tested by: B	randon Hobbs		Power: 54 VDC		Job Site:	TX05	
ST SPECIFICATION			Test Method				
C 24E:2020			ANSI C63.26:2015				
0 1 1111111			7.1101.000.20.2010				
MMENTS							
	h losses were accounte	ed for in the reference level offes	t including any attenuators, filters and DC blocks. The ca	arrier was set to maximu	m for all testing		
measurement pati	ii iosses were accounte	a for in the reference level ones	it molutaling any attenuators, inters and Do blocks. The or	arrier was set to maxima	in for all testing.		
VIATIONS FROM T	EST STANDARD						
ne							
onfiguration #	5,6,7,8	1	2 /1 1				
illiguration #	5,0,7,6	Signature	Jan X Jan 1				
		Signature	Frequency	Measured	Max Value	Limit	
			Range	Freq (MHz)	(dBm)	< (dBm)	Result
4.4. D 1.05 ND 1 - T	Г, 1930 MHz - 1995 MHz		Kalige	Freq (MHZ)	(ubiii)	< (ubiii)	Result
10	0 MHz Bandwidth						
	QPSK Modul						_
		Mid Channel 1962.5 MHz	9 kHz - 150 kHz	0.01	-69.89	-49	Pass
		Mid Channel 1962.5 MHz	150 kHz - 20 MHz	1.18	-54.79	-39	Pass
		Mid Channel 1962.5 MHz	20 MHz - 3 GHz	2646.13	-25.06	-19	Pass
		Mid Channel 1962.5 MHz	3 GHz - 10 GHz	3755.13	-37.5	-19	Pass
		Mid Channel 1962.5 MHz	10 GHz - 18 GHz	14809	-35.99	-19	Pass
		Mid Channel 1962.5 MHz	18 GHz - 22 GHz	21446	-26.38	-19	Pass
15	5 MHz Bandwidth						
	QPSK Modul	lation					
		Mid Channel 1962.5 MHz	9 kHz - 150 kHz	0.01	-70.59	-49	Pass
		Mid Channel 1962.5 MHz	150 kHz - 20 MHz	1.18	-54.81	-39	Pass
		Mid Channel 1962.5 MHz	20 MHz - 3 GHz	2611.86	-24.68	-19	Pass
		Mid Channel 1962.5 MHz	3 GHz - 10 GHz	3756	-38.16	-19	Pass
		Mid Channel 1962.5 MHz	10 GHz - 18 GHz	14277	-35.75	-19	Pass
_		Mid Channel 1962.5 MHz	18 GHz - 22 GHz	21839	-25.83	-19	Pass
	0 MHz Bandwidth						
20	QPSK Modul	lation					
20		ME LOS 14000 E MILL	9 kHz - 150 kHz	0.01	-69.97	-49	Pass
20		Mid Channel 1962.5 MHz					
20		Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	150 kHz - 20 MHz	1.18	-54.67	-39	Pass
20							Pass Pass
20		Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	20 MHz - 3 GHz	2643.15	-25.29	-19	Pass
20		Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz	2643.15 3808.5	-25.29 -37.96	-19 -19	Pass Pass
20		Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	20 MHz - 3 GHz	2643.15	-25.29	-19	Pass

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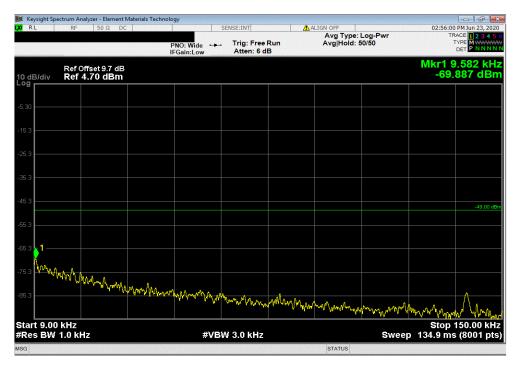


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

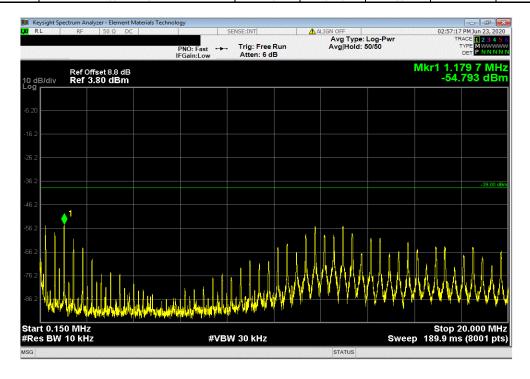
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

9 kHz - 150 kHz 0.01 -69.89 -49 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz						
	Frequency	Measured	Max Value	Limit			
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result		
ı	150 kHz - 20 MHz	1.18	-54.79	-39	Pass		



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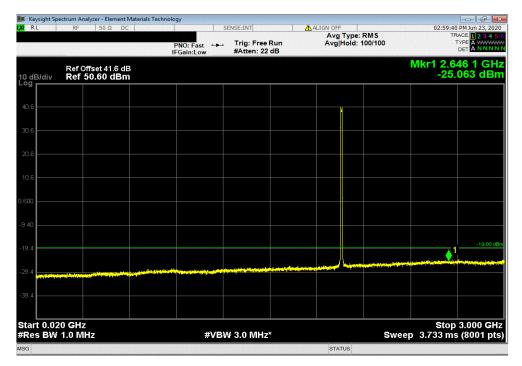


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

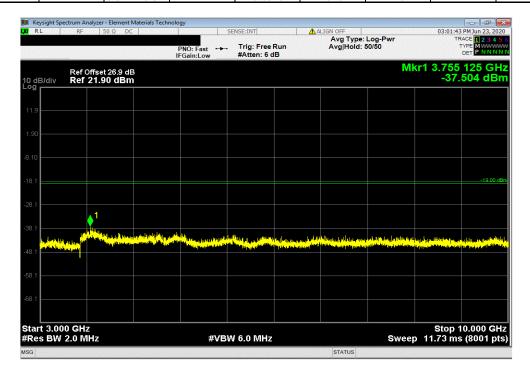
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

20 MHz - 3 GHz 2646.13 -25.06 -19 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz					
	Frequency	Measured	Max Value	Limit		
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result	
i ſ	3 GHz - 10 GHz	3755.13	-37.5	-19	Pass	



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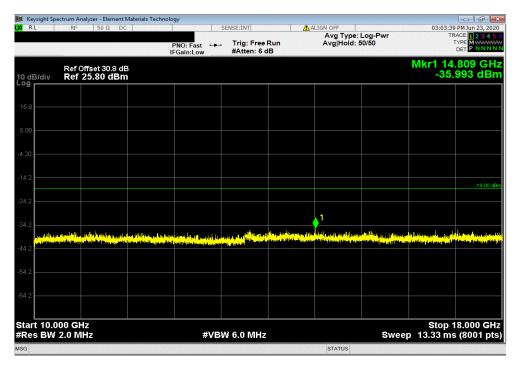


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

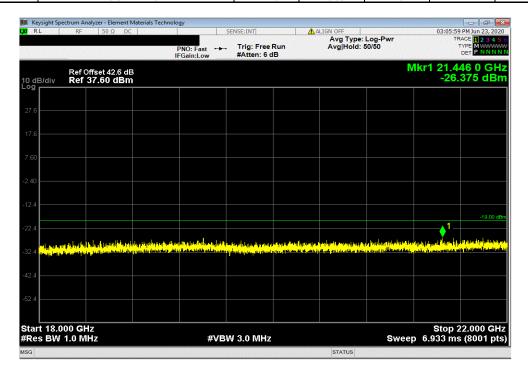
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

10 GHz - 18 GHz 14809 -35.99 -19 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz,	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz					
	Frequency	Measured	Max Value	Limit			
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result		
ĺ	18 GHz - 22 GHz	21446	-26.38	-19	Pass		



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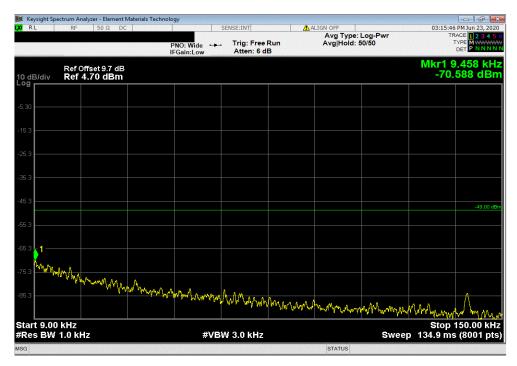


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

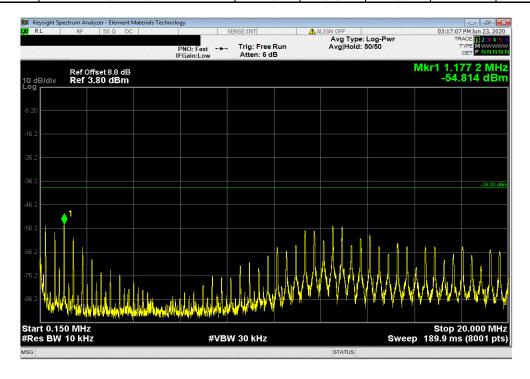
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

9 kHz - 150 kHz 0.01 -70.59 -49 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz						
	Frequency	Measured	Max Value	Limit			
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result		
ı	150 kHz - 20 MHz	1.18	-54.81	-39	Pass		



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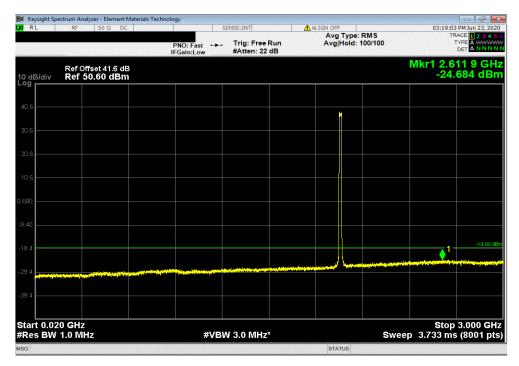


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

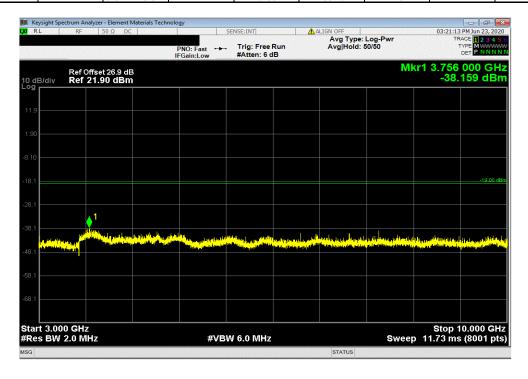
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

20 MHz - 3 GHz 2611.86 -24.68 -19 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz					
	Frequency	Measured	Max Value	Limit		
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result	
i T	3 GHz - 10 GHz	3756	-38.16	-19	Pass	



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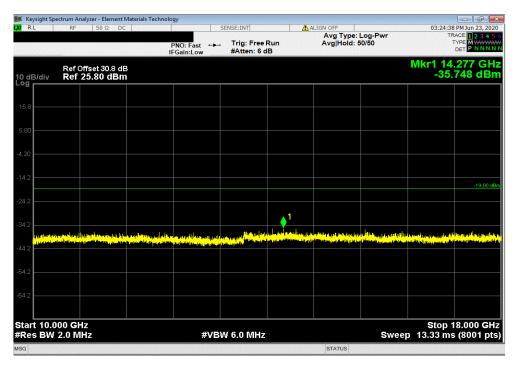


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

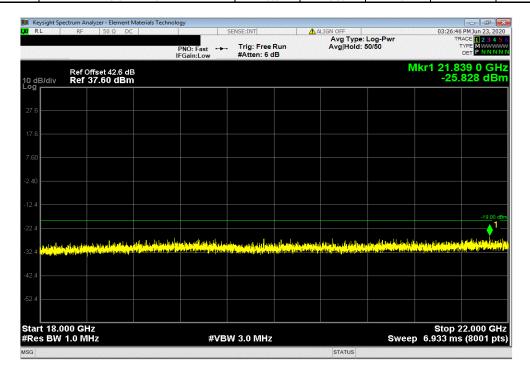
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

10 GHz - 18 GHz 14277 -35.75 -19 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz,	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 15 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz					
	Frequency	Measured	Max Value	Limit			
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result		
ĺ	18 GHz - 22 GHz	21839	-25.83	-19	Pass		



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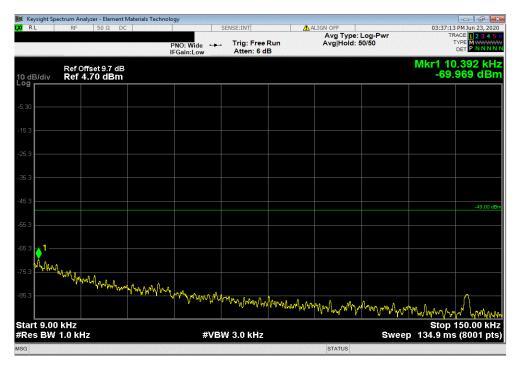


 Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 20 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

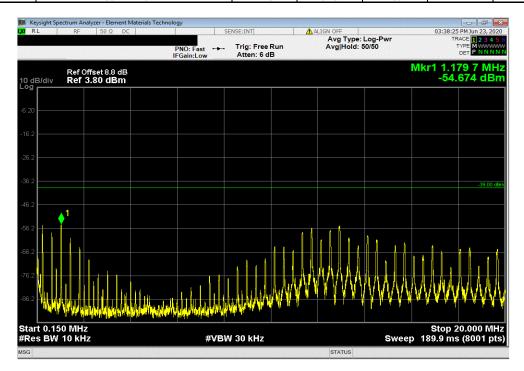
 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 < (dBm)</th>
 Result

 9 kHz - 150 kHz
 0.01
 -69.97
 -49
 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz, 20 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz						
	Frequency	Measured	Max Value	Limit			
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result		
ı	150 kHz - 20 MHz	1.18	-54.67	-39	Pass		



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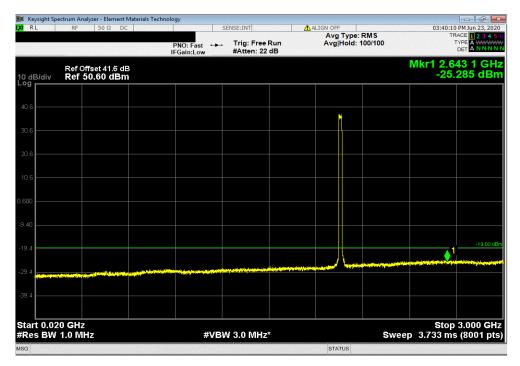


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 20 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

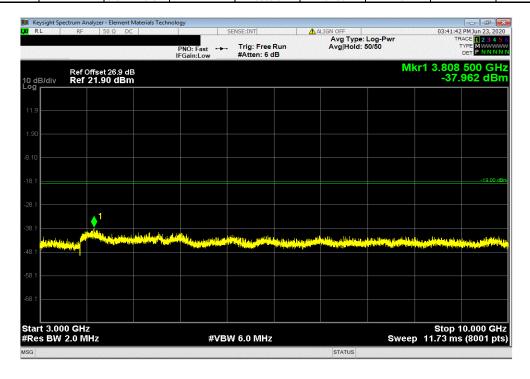
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

20 MHz - 3 GHz 2643.15 -25.29 -19 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 20 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz					
	Frequency	Measured	Max Value	Limit		
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result	
ĺ	3 GHz - 10 GHz	3808.5	-37.96	-19	Pass	



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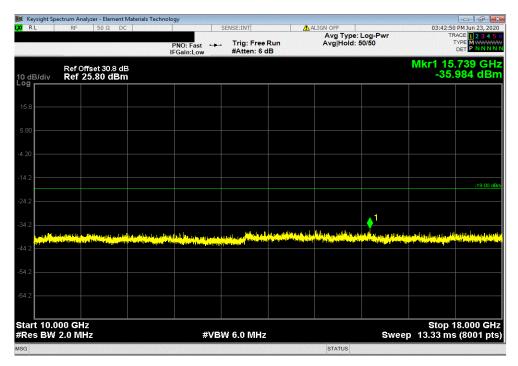


Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 20 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz

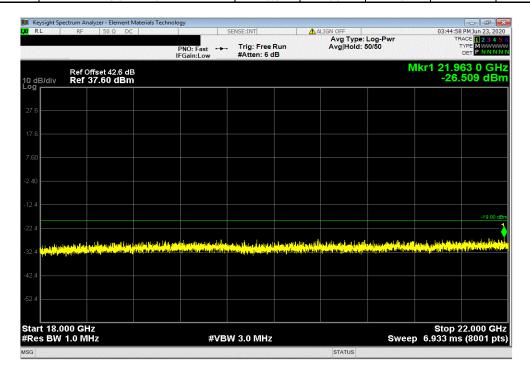
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

10 GHz - 18 GHz 15739 -35.98 -19 Pass



	Port 4, Band 25 NB IoT, 1930 MHz - 1995 MHz , 20 MHz Bandwidth, QPSK Modulation, Mid Channel 1962.5 MHz					
	Frequency	Measured	Max Value	Limit		
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result	
ĺ	18 GHz - 22 GHz	21963	-26.51	-19	Pass	



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Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFL	27-Feb-20	27-Feb-21
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21

TEST DESCRIPTION

The antenna port spurious emissions were measured at the RF output terminal of the EUT through 4 different attenuation configurations which continues through to the RF input of the spectrum analyzer. Analyzer plots utilizing a resolution bandwidth called out by the client's test plan were made for each modulation type from 9 KHz to 22 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than the limits also called out by the client's test plan shown below.

The measurement methods are detailed in KDB971168 D01v03 section 6 and ANSI C63.26-2015.

Per FCC 2.1057(a)(1), the upper level of measurement is the 10th harmonic of the highest fundamental frequency.

These measurements are for frequency band after the first 1.0 MHz bands immediately outside and adjacent to the frequency block.

Per section FCC 27.53(h)(1), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter. The conducted emissions limits are shown in Table 2

The limit for the 9kHz to 150kHz frequency range was adjusted to –49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to –39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: -39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (AHFIG) as the original certification test. The AHFIG antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in the original certification testing) and antenna port 4 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraph 5.7.2i.

Carrier bandwidths of 10, 15, & 20MHz were verified using NB IoT GB carriers under this effort. The LTE modulation type for this testing was set up according to 3GPP TS 36.141 E-UTRA Test Models and is "E-TM 1.1 (QPSK modulation type) with N-TM (narrow band IoT)".

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						TbtTx 2020.06.08.0 BETA	XMit 2020
EUT: Al					Work Order:		
Serial Number: KS	9191322351				Date:	: 23-Jun-20	
Customer: No	Customer: Nokia Solutions and Networks				Temperature:	23.3 °C	
Attendees: Mitchell Hill, John Rattanavong				Humidity:	51.9% RH		
Project: No	one				Barometric Pres.:	1015 mbar	
Tested by: Br	randon Hobbs		Power: 54 VDC		Job Site:	TX05	
ST SPECIFICATION			Test Method				
C 27:2020			ANSI C63.26:2015				
MMENTS							
measurement path	losses were accounted	ed for in the reference level offest in	ncluding any attenuators, filters and DC blocks. The	carrier was set to maximu	m for all testing.		
EVIATIONS FROM T	EST STANDARD						
ne	LOT STANDARD						
		T					
onfiguration #	5,6,7,8		7 /1 /				
J	-,-,-,-	Signature	7				
		o.g.rataro	Frequency	Measured	Max Value	Limit	
			Range	Freg (MHz)	(dBm)	< (dBm)	Result
t 4 Rand 66 NR IoT	T, 2110 MHz - 2200 MHz				(/	- (/	
	0 MHz Bandwidth						
10	QPSK Modu	lation					
	QPSK WOOD	Mid Channel 2155 MHz	9 kHz - 150 kHz	0.01	-71.13	-49	Pass
		Mid Channel 2155 MHz	150 kHz - 20 MHz	1.18	-55.7	-39	Pass
		Mid Channel 2155 MHz	20 MHz - 3 GHz	2618.93	-24.73	-19	Pass
		Mid Channel 2155 MHz	3 GHz - 10 GHz	3836.5	-37.81	-19	Pass
		Mid Channel 2155 MHz	10 GHz - 18 GHz	14411	-36.09	-19	Pass
_		Mid Channel 2155 MHz	18 GHz - 22 GHz	21564	-25.93	-19	Pass
15	5 MHz Bandwidth						
	QPSK Modu						
		Mid Channel 2155 MHz	9 kHz - 150 kHz	0.01	-71.81	-49	Pass
		Mid Channel 2155 MHz	150 kHz - 20 MHz	1.18	-55.7	-39	Pass
				1.10			
		Mid Channel 2155 MHz	20 MHz - 3 GHz	2573.49	-24.73	-19	Pass
		Mid Channel 2155 MHz	20 MHz - 3 GHz	2573.49	-24.73	-19	
		Mid Channel 2155 MHz Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz	2573.49 3704.38	-24.73 -38.11	-19 -19	Pass
		Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz	2573.49 3704.38 16592	-24.73 -38.11 -36.08	-19 -19 -19	Pass Pass
20) MHz Randwidth	Mid Channel 2155 MHz Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz	2573.49 3704.38	-24.73 -38.11	-19 -19	Pass
20	0 MHz Bandwidth	Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz	2573.49 3704.38 16592	-24.73 -38.11 -36.08	-19 -19 -19	Pass Pass
20	0 MHz Bandwidth QPSK Modu	Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz 18 GHz - 22 GHz	2573.49 3704.38 16592 21915.5	-24.73 -38.11 -36.08 -26.15	-19 -19 -19 -19	Pass Pass Pass
20		Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz 18 GHz - 22 GHz 9 kHz - 150 kHz	2573.49 3704.38 16592 21915.5	-24.73 -38.11 -36.08 -26.15	-19 -19 -19 -19	Pass Pass Pass
20		Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz Mid Channel 2155 MHz Islation Mid Channel 2155 MHz Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz 18 GHz - 22 GHz 9 kHz - 150 kHz 150 kHz - 20 MHz	2573.49 3704.38 16592 21915.5 0.01	-24.73 -38.11 -36.08 -26.15 -70.51 -55.72	-19 -19 -19 -19 -49 -39	Pass Pass Pass Pass Pass
20		Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz 18 GHz - 22 GHz 9 KHz - 150 KHz 150 KHz - 20 MHz 20 MHz - 3 GHz	2573.49 3704.38 16592 21915.5 0.01 1.18 2612.23	-24.73 -38.11 -36.08 -26.15 -70.51 -55.72 -24.61	-19 -19 -19 -19 -49 -39 -19	Pass Pass Pass Pass Pass Pass
20		Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz 18 GHz - 22 GHz 9 kHz - 150 kHz 150 kHz - 20 MHz 20 MHz - 3 GHz 3 GHz - 10 GHz	2573.49 3704.38 16592 21915.5 0.01 1.18 2612.23 3833	-24.73 -38.11 -36.08 -26.15 -70.51 -55.72 -24.61 -38.16	-19 -19 -19 -19 -49 -39 -19	Pass Pass Pass Pass Pass Pass Pass
20		Mid Channel 2155 MHz	20 MHz - 3 GHz 3 GHz - 10 GHz 10 GHz - 18 GHz 18 GHz - 22 GHz 9 KHz - 150 KHz 150 KHz - 20 MHz 20 MHz - 3 GHz	2573.49 3704.38 16592 21915.5 0.01 1.18 2612.23	-24.73 -38.11 -36.08 -26.15 -70.51 -55.72 -24.61	-19 -19 -19 -19 -49 -39 -19	Pass Pass Pass Pass Pass Pass

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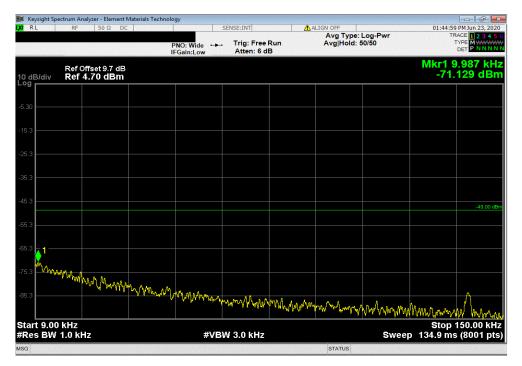


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 10 MHz Bandwidth , QPSK Modulation, Mid Channel 2155 MHz

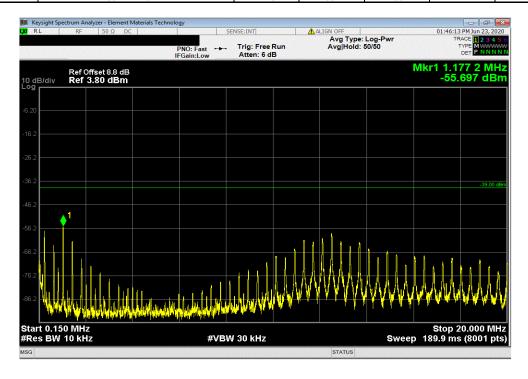
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

9 kHz - 150 kHz 0.01 -71.13 -49 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz	, 10 MHz Bandwi	dth , QPSK Modu	lation, Mid Chanr	nel 2155 MHz
	Frequency	Measured	Max Value	Limit	
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	150 kHz - 20 MHz	1.18	-55.7	-39	Pass



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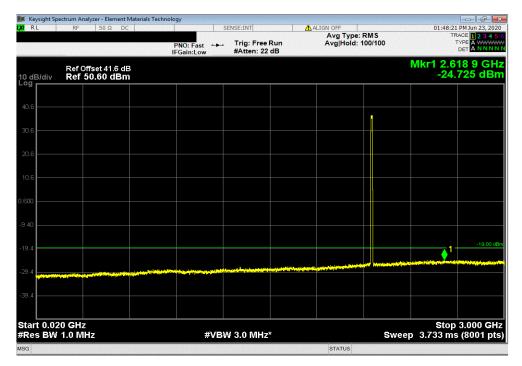


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 10 MHz Bandwidth , QPSK Modulation, Mid Channel 2155 MHz

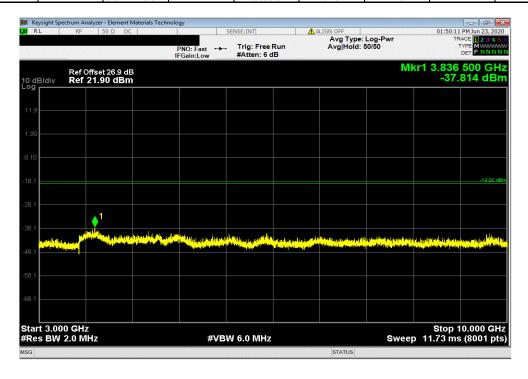
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

20 MHz - 3 GHz 2618.93 -24.73 -19 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz	, 10 MHz Bandwi	dth , QPSK Modu	lation, Mid Chanr	nel 2155 MHz
	Frequency	Measured	Max Value	Limit	
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result
ĺ	3 GHz - 10 GHz	3836.5	-37.81	-19	Pass



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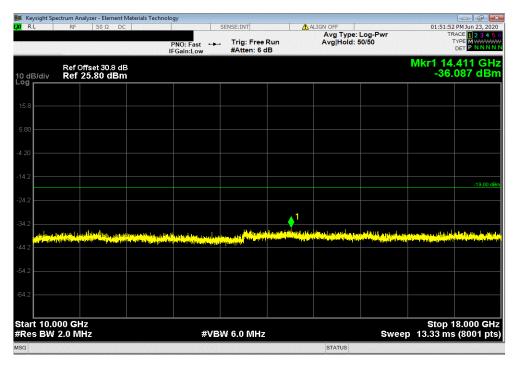


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 10 MHz Bandwidth , QPSK Modulation, Mid Channel 2155 MHz

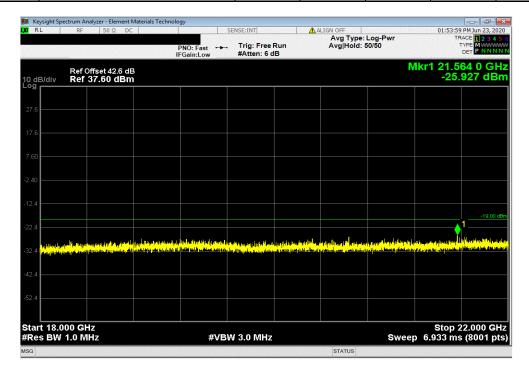
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

10 GHz - 18 GHz 14411 -36.09 -19 Pass



Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 10 MHz Bandwidth , QPSK Modulation, Mid Channel 2155 MHz				
Frequency	Measured	Max Value	Limit	
Range	Freq (MHz)	(dBm)	< (dBm)	Result
18 GHz - 22 GHz	21564	-25.93	-19	Pass



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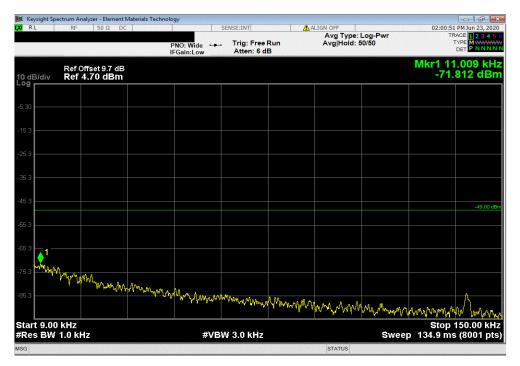


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 15 MHz Bandwidth , QPSK Modulation, Mid Channel 2155 MHz

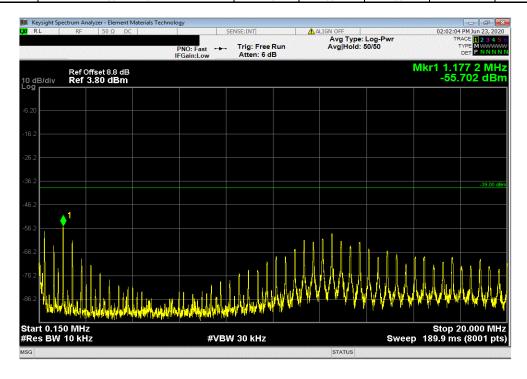
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

9 kHz - 150 kHz 0.01 -71.81 -49 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz	, 15 MHz Bandwi	dth , QPSK Modu	lation, Mid Chanr	nel 2155 MHz
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
1	150 kHz - 20 MHz	1.18	-55.7	-39	Pass



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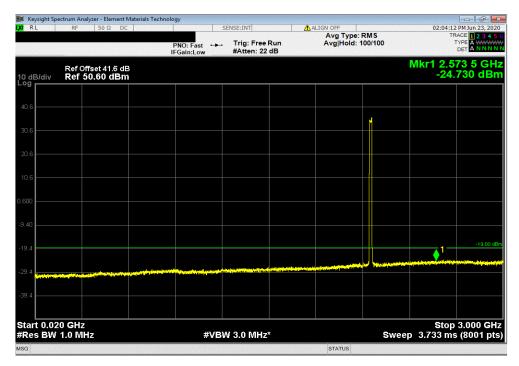


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 15 MHz Bandwidth , QPSK Modulation, Mid Channel 2155 MHz

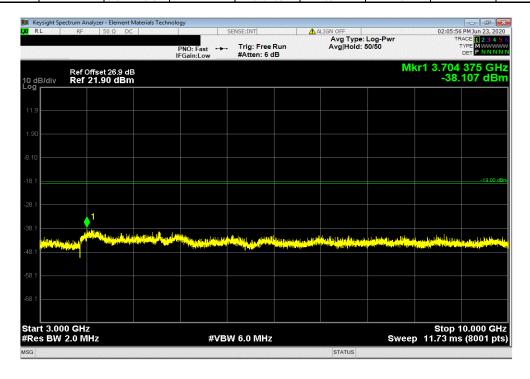
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

20 MHz - 3 GHz 2573.49 -24.73 -19 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz	, 15 MHz Bandwi	dth , QPSK Modu	lation, Mid Chanr	nel 2155 MHz
	Frequency	Measured	Max Value	Limit	
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result
ĺ	3 GHz - 10 GHz	3704.38	-38.11	-19	Pass



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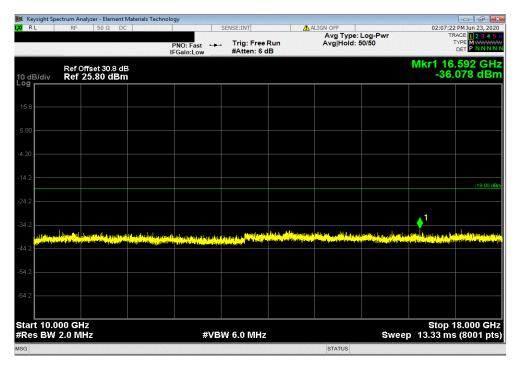


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 15 MHz Bandwidth , QPSK Modulation, Mid Channel 2155 MHz

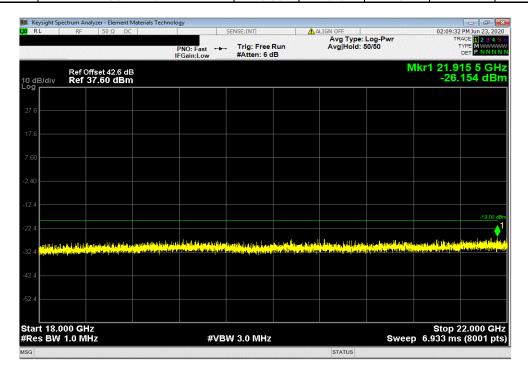
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

10 GHz - 18 GHz 16592 -36.08 -19 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz	15 MHz Bandwi	dth , QPSK Modu	lation, Mid Chanr	nel 2155 MHz
	Frequency	Measured	Max Value	Limit	
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result
ı	18 GHz - 22 GHz	21915.5	-26.15	-19	Pass



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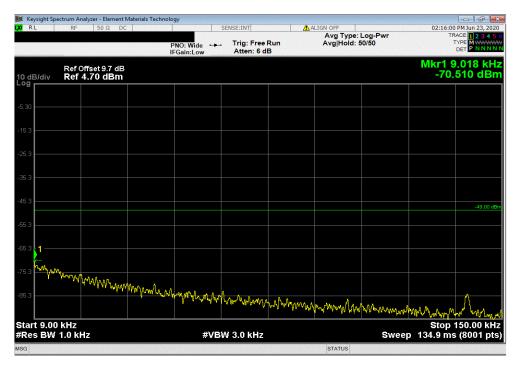


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz

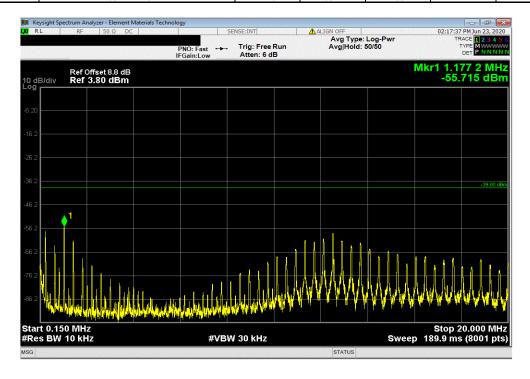
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

9 kHz - 150 kHz 0.01 -70.51 -49 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
	Frequency	Measured	Max Value	Limit		
	Range	Freq (MHz)	(dBm)	< (dBm)	Result	
l	150 kHz - 20 MHz	1.18	-55.72	-39	Pass	



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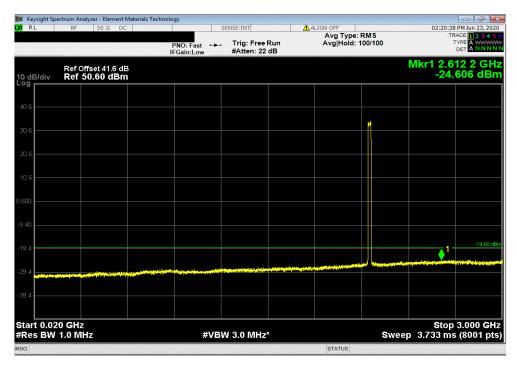


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz

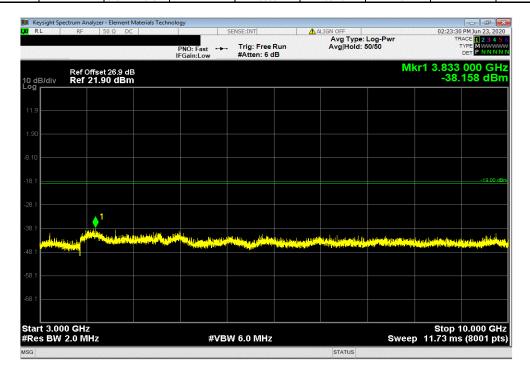
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

20 MHz - 3 GHz 2612.23 -24.61 -19 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
	Frequency	Measured	Max Value	Limit		
_	Range	Freq (MHz)	(dBm)	< (dBm)	Result	
ĺ	3 GHz - 10 GHz	3833	-38.16	-19	Pass	



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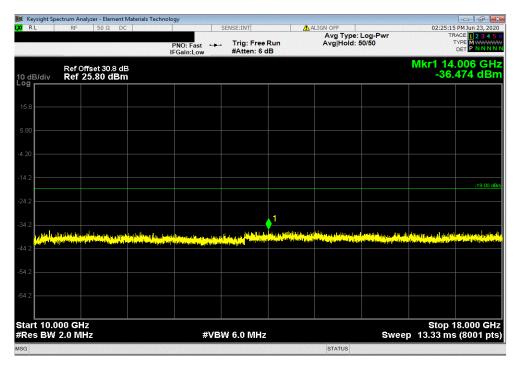


Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz

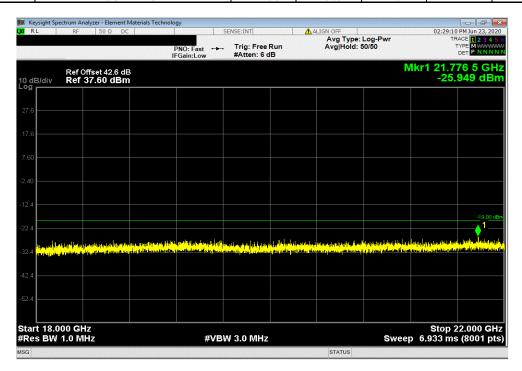
Frequency Measured Max Value Limit

Range Freq (MHz) (dBm) < (dBm) Result

10 GHz - 18 GHz 14006 -36.47 -19 Pass



	Port 4, Band 66 NB IoT, 2110 MHz - 2200 MHz, 20 MHz Bandwidth, QPSK Modulation, Mid Channel 2155 MHz					
	Frequency	Measured	Max Value	Limit		
	Range	Freq (MHz)	(dBm)	< (dBm)	Result	
ĺ	18 GHz - 22 GHz	21776.5	-25.95	-19	Pass	



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