

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
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet. For Multiband operation, measurements were taken at the lower band edge of the lower band and the upper band edge of the upper band.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of [-10\*log((N)] to account for the device operation as a N port MIMO transmitter, as per FCC KDB 622911.

For Bands 12 and 14, the adjustment factor is  $-10^{*}\log(4) = -6$  dB. The Bands 12 and 14 adjusted limit is -19 dBm. For Band 29, the adjustment factor is  $-10^{*}\log(2) = -3$  dB. The Band 29 adjusted limit is -16 dBm.

For Band 14 band edge measurements from 769MHz-775MHz and 799MHz-807MHz, reference level offset corrections were applied to the spectrum analyzer, according to the following table:

-									
Frequency									
(MHz)	769	769.05	769.1	769.15	769.2	769.25	769.3	769.35	769.4
Correction									
Factor (dB)	50.1	49.2	48.4	47.8	47.3	46.9	46.5	46.2	45.9
Frequency									
(MHz)	769.45	769.5	769.55	769.6	769.65	769.7	769.75	769.8	769.85
Correction									
Factor (dB)	45.7	45.4	45.2	45.1	44.9	44.7	44.6	44.5	44.4
Frequency									
(MHz)	769.9	769.95	770	770.5	771	775	776	798	805
Correction									
Factor (dB)	44.3	4.2	44.1	43.3	42.9	41.9	41.8	41.1	41.1

Per FCC section 27.53(g), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the RRH may operate as a 4 port MIMO transmitter for Band 12.

FCC 27.53(g) requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. FCC 27.53(g) requires a >30 kHz measurement bandwidth for emissions between 100 kHz outside of the RRH operating frequency range and band edge of the operating frequency range.

Per section 90.543(e)(3), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the RRH may operate as a 4 port MIMO transmitter for Band 14.

FCC 90.543(e)(5) requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. FCC 90.543(e)(5) requires a >30 kHz measurement bandwidth for emissions between 100 kHz outside of the RRH operating frequency range and band edge of the operating frequency range.



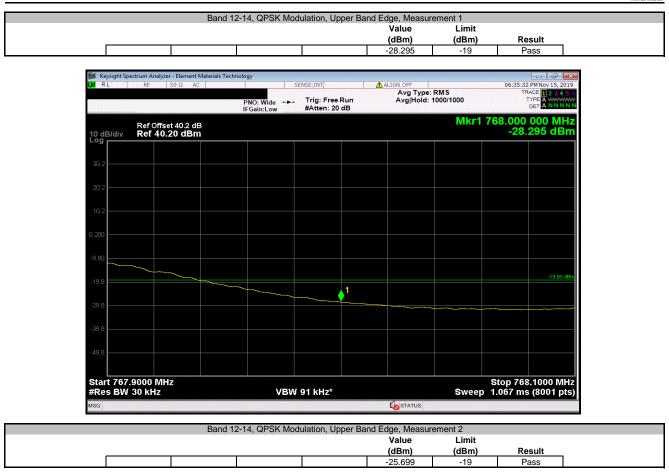
					-	XMit 2019.0
	AHLBBA RRH			Work Order:		
Serial Number:					19-Nov-19	
Customer:	Nokia Solutions and Netw	works		Temperature:	23 °C	
Attendees:	John Rattanavong			Humidity:	30.7% RH	
Project:				Barometric Pres.:		
	Jonathan Kiefer		Power: 54VDC	Job Site:		
TEST SPECIFICATI			Test Method			
CC 27:2019			ANSI C63.26:2015			
CC 2013			ANSI C63.26:2015			
COMMENTS			ANSI C63.20.2015			
	rrier band edge measuren	nents. Tested on highest powe	er antenna port (Port 1). EUT is operated at 100%	6 duty cycle.		
	I TEST STANDARD					
None						
Configuration #	2, 3	Signature	Jonathan Kiefer			
				Value (dBm)	Limit (dBm)	Result
Band 12-14	QPSK Modulation					
	Lower Band B	Edge				
		Measurement 1		-27.407	-19	Pass
		Measurement 2		-24.856	-19	Pass
	Upper Band B			24.000	15	1 455
		Measurement 1		-28.295	-19	Boos
		Measurement 2				Pass Pass
				-25.699	-19	
		Measurement 3		-54.844	-52	Pass
		Measurement 4		-69.914	-52	Pass
	16QAM Modulation Lower Band B	Edge				
		Measurement 1		-27.776	-19	Pass
		Measurement 2		-25.349	-19	Pass
	Upper Band B	Edge				
		Measurement 1		-28.684	-19	Pass
		Measurement 2		-25.543	-19	Pass
		Measurement 3		-54.426	-52	Pass
		Measurement 4		-70.017	-52	Pass
	64QAM Modulation	measurement 4		-70.017	-52	Pass
		Edua				
	Lower Band B					
		Measurement 1		-27.665	-19	Pass
		Measurement 2		-25.088	-19	Pass
	Upper Band B					
		Measurement 1		-28.205	-19	Pass
		Measurement 2		-25.218	-19	Pass
		Measurement 3		-54.71	-52	Pass
		Measurement 4		-69.984	-52	Pass
	256QAM Modulation					
	Lower Band B					_
		Measurement 1		-27.622	-19	Pass
		Measurement 2		-24.595	-19	Pass
	Upper Band B	Edge				
		Measurement 1		-28.29	-19	Pass
		Measurement 2		-25.489	-19	Pass
		Measurement 3		-54.45	-52	Pass
		Measurement 3 Measurement 4		-54.45 -69.873	-52 -52	Pass Pass





RL	RF	50 Ω AC		SENSE:INT	ALIGN OFF			PM Nov 15, 201
			PNO: Fast ↔ IFGain:Low		Avg Type: I Avg Hold: 1		TR T	ACE 1 2 3 4 5 TYPE A DET A NNNN
) dB/div		set 40.2 dB <b>J.20 dBm</b>				N	lkr1 728. -24.	.900 MH 856 dBr
0.2								
0.2								
0.2								
30								-19.00 d
.8					1		- Lun	
0.8								
).8								
tart 705.							Stop 7 5.333 ms	44.00 MH
kes BW	100 kHz	2	VB	W 300 kHz*	STATUS	Sweep	5.333 ms	5 (8001 pt





RL	ectrum Analyzer - Element Ma RF 50 Ω AC	5,	SENSE:INT	ALIGN OFF	06:36:49 PM Nov 15, 20
		PNO: Fast IFGain:Low	→→ Trig: Free Run #Atten: 20 dB	Avg Type: RMS Avg Hold: 1000/1	TRACE 1 2 3 4 5 TYPE A WWW DET A NN N
) dB/div	Ref Offset 40.2 dB Ref 40.20 dBm				Mkr1 768.100 00 MH -25.699 dBi
-					
).2	[				
.2					
.2					
30					
.8		1			-19.00 (
.8					
.8		L			
.8					
art 758. Res BW	00 MHz 100 kHz		VBW 300 kHz*		Stop 808.00 Mi Sweep 6.400 ms (8001 pt
3				STATUS	





Band 12-14, QPSK Modulation, Upper Band Edge, Measurement 4								
Value Limit								
				(dBm)	(dBm)	Result		
				-69.914	-52	Pass		

RL	RF 50 Ω	AC CORRE	C	SENSE:INT	ALIGN OFF	06:40:38 PM Nov 15, 201
			PNO: Wide ↔ IFGain:High		Avg Type: RMS Avg Hold: 200/200	TRACE 1 2 3 4 5 TYPE A WWW DET A N N N
dB/div	Ref -32.00	dBm				Mkr1 804.299 MH -69.914 dBi
<sup>pg</sup>						
7.0						
2.0						
7.0						
						-52.00 c
2.0						
7.0						
2.0						
7.0						
. MANANA ANA		erstudije de dia statianja	والمريابا والمراجع والمحاجة والمحاجة والمحاجة	an a	vine in the state of the state	niyaa iya fiyiha ahaa ahaa iyo baara daa ahaa ahaa ahaa ahaa ahaa ahaa a
7.0						
	000 MHz					Stop 807.000 MF
Res BW	6.8 kHz		#VE	SW 24 kHz*	S	weep 211.7 ms (8001 pt





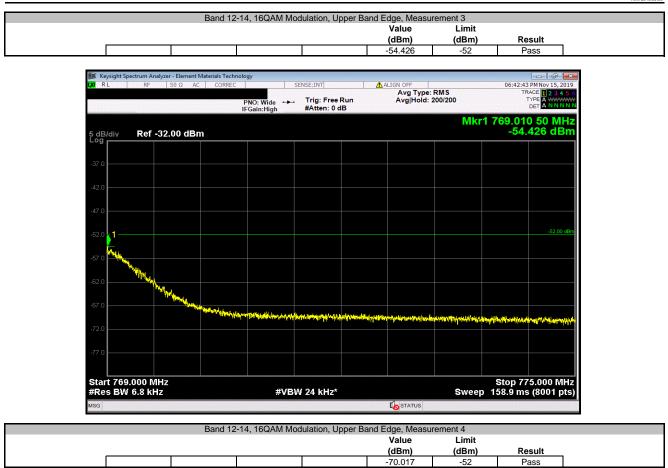
Keysight Spectrum Analyzer - Element Materials			
RL RF 50 Ω AC	PNO: Fast →→ Trig: Free Run IFGain:Low #Atten: 20 dB	ALIGN OFF Avg Type: RMS Avg Hold: 1000/1000	06:46:13 PMNov 15, 2019 TRACE 1 2 3 4 5 TYPE A WWWW DET A NNNN
Ref Offset 40.2 dB dB/div Ref 40.20 dBm		N	lkr1 728.900 MH -25.349 dBn
0.2		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~
0.2			
0.2			
80			-19.00 dE
.8			
.8			
.8			
art 705.00 MHz tes BW 100 kHz	VBW 300 kHz*	Sweep	Stop 744.00 MH 5.333 ms (8001 pts
G		STATUS	





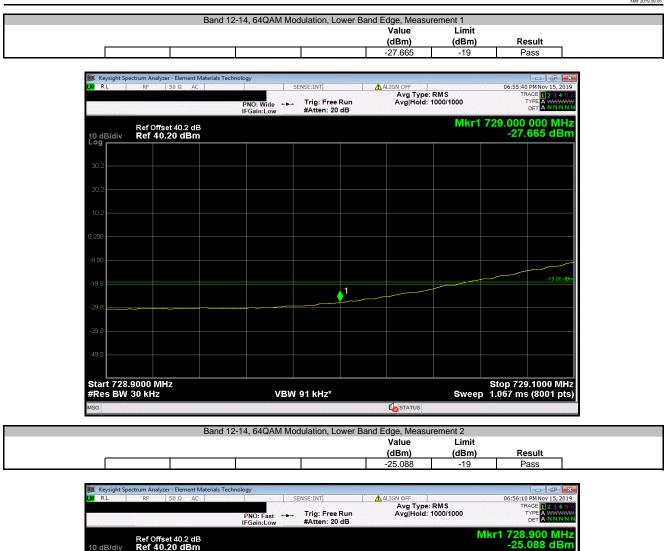
RL	ctrum Analyzer - Element I RF 50 Ω AC		SEI	VSE:INT	ALIGN OFF		06:45:1	2 PM Nov 15, 201
			Fast ++-	Trig: Free Run #Atten: 20 dB	Avg Type: Avg Hold:	1000/1000	IT	RACE 12345 TYPE A DET A NNNN
) dB/div	Ref Offset 40.2 dl Ref 40.20 dBn					Mk	r1 768.10 -25	0 00 MH 543 dBr
30.2								
0.2	m							
0.2								
:00								
.80								
9.8		1						-19.00 d
9.8								
9.8								
9.8								
art 758. Res BW	00 MHz 100 kHz		VBW :	300 kHz*		Swee	Stop 8 p 6.400 m	808.00 MH s (8001 pt
G					STATUS			





RL	ectrum Analyzer - Elei RF 50 Ω			SENSE:INT	ALIGN OFF		06:43:4	6 PM Nov 15, 201
			PNO: Wide ↔ IFGain:High	⊷ Trig: Free Run #Atten: 0 dB	Avg Typ Avg Hold			RACE 1 2 3 4 5 TYPE A WWWW DET A NNNN
dB/div	Ref -32.00	dBm					Mkr1 801 -70	.217 MH .017 dBr
09								
97.0								
12.0								
7.0								
i2.0								-52.00 d
7.0								
2.0								
67.0			1					
2.0	and when the state of the state	ulinian di inanisi kaa	-	un de la competition provinsion de la competition de la competition de la competition de la competition de la c	eren ander einer steren anel der	al water and the second		haladigeria iliyaharata
7.0								
	.000 MHz						Stop 8	07.000 MH
Res BW	6.8 kHz		#V	BW 24 kHz*	STATUS	Swe	ep 211.7 m	s (8001 pt





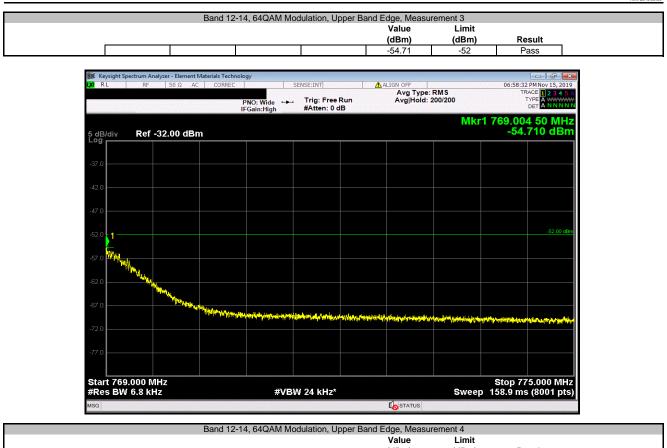
	PNO: Fast 🔸	Trig: Free Run #Atten: 20 dB	Avg Type: RMS Avg Hold: 1000/1000	TRACE 1 2 3 4 5 TYPE A WWWW DET A NNNN
Ref Offset 40.2 dB 0 dB/div Ref 40.20 dBm				Mkr1 728.900 MH -25.088 dBn
30.2				
20.2				
10.2				
200				
.80				
9.8			1	-19.00 d
9.8				
9.8				
9.8				
tart 705.00 MHz Res BW 100 kHz	VBW	/ 300 kHz*	Sw	Stop 744.00 MH eep 5.333 ms (8001 pt
5G			STATUS	eeb allos ind (or e i br





Keysight Spe	ectrum Analyzer - Element Mater RF 50 Ω AC		non nor	•		
	R- 50 Ω AC	PNO: Fast +++ IFGain:Low	Trig: Free Run #Atten: 20 dB	ALIGN OFF Avg Type: R Avg Hold: 10	00/1000	06:57:14 PM Nov 15, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N
10 dB/div	Ref Offset 40.2 dB Ref 40.20 dBm				Mkr1	768.100 00 MHz -25.218 dBm
30.2						
20.2						
10.2						
).200						
-9.80						
-19.8	1					-19.00 dBn
-29.8						
-39.8						
Start 758. #Res BW		VBW	300 kHz*		Sweep	Stop 808.00 MHz 6.400 ms (8001 pts)
ISG						

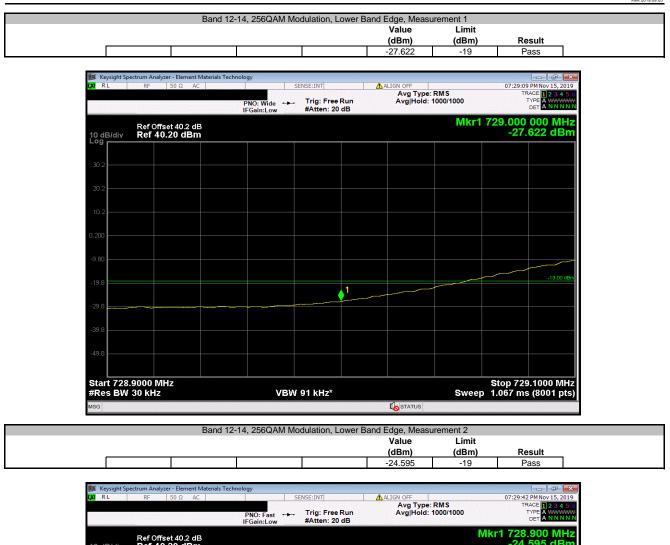




	Danu 12	-14, 64QAIVI IVIOU	иацоп, оррег ва	ina Eage, Measu	rement 4	
				Value	Limit	
				(dBm)	(dBm)	Result
				-69.984	-52	Pass

RL	RF	50 Ω	AC CORREC		SENSE:INT		ALIGN OFF		06:59:	31 PM Nov 15, 201
				PNO:Wide ↔ IFGain:High	Trig: Free #Atten: 0		Avg Type: Avg Hold:			TRACE 12345 TYPE A DET A NNN
dB/div	Ref -	32.00 dE	sm						Mkr1 802 -69	2.325 MH 9.984 dBi
<sup>pg</sup>										Π
7.0										
2.0										
·.o										
2.0										-52.00 d
7.0										
2.0										
7.0					<b>♦</b> <sup>1</sup>					
2.0 <b>******</b>	rynydyn yn rela	danian <b>ininin</b> ininini dani	and the second secon	****	Yogi ya Asina Madan kani	er in the state	ant night the later of the property of the second	nin a tildigi atter	and the second secon	at your the second s
7.0										
art 799.				l					Stop 8	07.000 MH
Res BW	6.8 kH	Z		#V	BW 24 kHz			Swe	eep 211.7 m	ıs (8001 pt





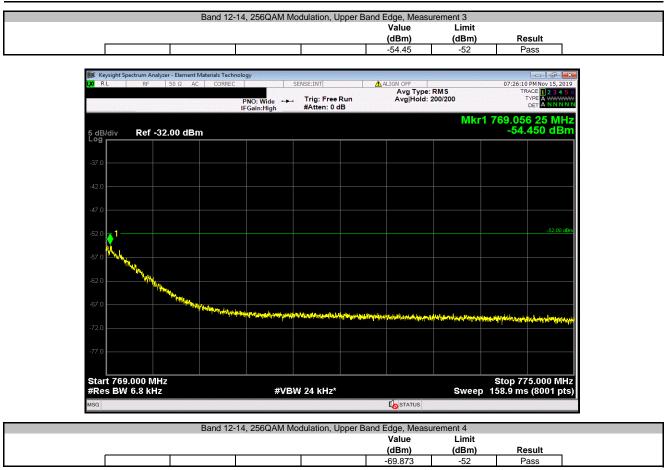
KL RF 5032 AC	PNO: Fast ↔→ Trig: Free Run IFGain:Low #Atten: 20 dB	Avg Type: RMS Avg Hold: 1000/1000	TRACE 1 2 3 4 5 TYPE A WWWW DET A NNNN
Ref Offset 40.2 dB 0 dB/div Ref 40.20 dBm			Mkr1 728.900 MH -24.595 dBn
30.2			
20.2			
10.2			
200			
9.80			
9.8			-19.00 dE
9.8			human
9.8			
9.8			
tart 705.00 MHz			Stop 744 00 MH
Res BW 100 kHz	VBW 300 kHz*	Swe	Stop 744.00 MH ep 5.333 ms (8001 pts
SG		STATUS	





	ectrum Analyzer - Element M				
RL	RF 50 Ω AC	PNO: Fast ← IFGain:Low	SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN OFF Avg Type: RMS Avg Hold: 1000/1000	07:28:43 PM Nov 15, 2019 TRACE 2 3 4 5 6 TYPE A WWWW DET A NNNNN
10 dB/div	Ref Offset 40.2 dB Ref 40.20 dBm	,		Mk	r1 768.100 00 MHz -25.489 dBm
30.2					
20.2					
10.2					
0.200					
-9.80					
-19.8		1			-19.00 dBm
-29.8					
-39.8					
Start 758	00 MHz				Stop 202 00 MHz
#Res BW		VE	SW 300 kHz*		Stop 808.00 MHz p 6.400 ms (8001 pts)
MSG					





	ectrum Analyzer - Element							
RL	RF 50 Ω A	CORREC	SENSE:INT		ALIGN OFF			3 PM Nov 15, 201
		PNO: V IFGain:		Free Run en: 0 dB	Avg Type: Avg Hold: 2			TYPE A WWWM DET A NNNN
dB/div	Ref -32.00 dB	m				I	Mkr1 805 -69.	.053 MH 873 dBr
37.0								
12.0								
7.0								
2.0								-52.00 d
7.0								
2.0								
7.0						1		
2.0 <b>411/444</b>	derithy af the state and the state of the st		hanaprahisi pakawang ng hisi	hill a start of the start of th	Nordina dalar ingela dalah dari	ang dan sebelah	<mark>n la provinsi provinsi</mark>	an a
7.0								
	.000 MHz 6.8 kHz		#VBW 24 k	Hz*		Swee	Stop 80 p 211.7 ms	07.000 MH s (8001 pt
للنعوي					STATUS			



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
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20

#### TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet. For Multiband operation, measurements were taken at the lower band edge of the lower band and the upper band edge of the upper band.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of [-10\*log((N)] to account for the device operation as a N port MIMO transmitter, as per FCC KDB 622911.

For Bands 12 and 14, the adjustment factor is  $-10^{*}\log(4) = -6$  dB. The Bands 12 and 14 adjusted limit is -19 dBm. For Band 29, the adjustment factor is  $-10^{*}\log(2) = -3$  dB. The Band 29 adjusted limit is -16 dBm.

For Band 14 band edge measurements from 769MHz-775MHz and 799MHz-807MHz, reference level offset corrections were applied to the spectrum analyzer, according to the following table:

Frequency									
(MHz)	769	769.05	769.1	769.15	769.2	769.25	769.3	769.35	769.4
Correction									
Factor (dB)	50.1	49.2	48.4	47.8	47.3	46.9	46.5	46.2	45.9
Frequency									
(MHz)	769.45	769.5	769.55	769.6	769.65	769.7	769.75	769.8	769.85
Correction									
Factor (dB)	45.7	45.4	45.2	45.1	44.9	44.7	44.6	44.5	44.4
Frequency									
(MHz)	769.9	769.95	770	770.5	771	775	776	798	805
Correction									
Factor (dB)	44.3	4.2	44.1	43.3	42.9	41.9	41.8	41.1	41.1

Per FCC section 27.53(g), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the RRH may operate as a 4 port MIMO transmitter for Band 12.

FCC 27.53(g) requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. FCC 27.53(g) requires a >30 kHz measurement bandwidth for emissions between 100 kHz outside of the RRH operating frequency range and band edge of the operating frequency range.

Per section 90.543(e)(3), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the RRH may operate as a 4 port MIMO transmitter for Band 14.

FCC 90.543(e)(5) requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. FCC 90.543(e)(5) requires a >30 kHz measurement bandwidth for emissions between 100 kHz outside of the RRH operating frequency range and band edge of the operating frequency range.

FCC 90.543(e)(1) requires an emission limit of -46dBm for any 6.25 kHz bandwidth between frequency bands 769-775 MHz and 799-805 MHz. The limit is adjusted to -52 dBm per 6.25kHz bandwidth [-46 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.



						XMit 20
	AHLBBA RRH			Work Order:		
Serial Number:					19-Nov-19	
	Nokia Solutions and Networks			Temperature:		
	John Rattanavong			Humidity:		
Project:	None			Barometric Pres.:	1017 mbar	
Tested by:	Jonathan Kiefer	Power: 54	VDC	Job Site:	TX09	
EST SPECIFICAT	IONS	Te	st Method			
CC 27:2019			ISI C63.26:2015			
CC 90I:2019			ISI C63.26:2015	· · · · · · · · · · · · · · · · · · ·		
OMMENTS			01 00012012010			
and 12-14 Multica	arrier band edge measurements.	Tested on highest power antenna port (Port 2). EUT i	s operated at 100% duty cycle.			
EVIATIONS FROM	M TEST STANDARD					
one						
onfiguration #	2, 3	Signature Jonathan 7	liefer			
				Value (dBm)	Limit (dBm)	Result
and 12-14	QPSK Modulation					
	Lower Band Edge					
	Measu	rement 1		-25.003	-19	Pass
	Measu	rement 2		-21.94	-19	Pass
	Upper Band Edge					
		rement 1		-23.504	-19	Pass
		rement 2		-21.154	-19	Pass
		rement 3		-54.753	-52	Pass
		rement 4		-69.859	-52	Pass
	16QAM Modulation			-03.055	-52	1 435
	Lower Band Edge					
		rement 1		-24.591	-19	Pass
		rement 2		-22.289	-19	Pass
		ement 2		-22.209	-19	Pass
	Upper Band Edge			0.1.00	4.0	_
		rement 1		-24.03	-19	Pass
		rement 2		-21.738	-19	Pass
		rement 3		-54.726	-52	Pass
		rement 4		-69.849	-52	Pass
	64QAM Modulation					
	Lower Band Edge					
	Measu	rement 1		-24.311	-19	Pass
	Measu	rement 2		-21.337	-19	Pass
	Upper Band Edge					
		rement 1		-23.922	-19	Pass
	Measu	rement 2		-21.203	-19	Pass
		rement 3		-54.877	-52	Pass
		rement 4		-69.901	-52	Pass
	256QAM Modulation			00.001	-	. 355
	Lower Band Edge					
		rement 1		-24.93	-19	Pass
		rement 2		-24.93	-19	Pass
				-22.074	-13	r dSS
	Upper Band Edge			00.000	40	D.
	N 4			-23.869	-19	Pass
	Measu			a	10	
	Measu	rement 2		-21.129	-19	Pass
	Measu Measu			-21.129 -54.303 -69.82	-19 -52 -52	Pass Pass Pass





RL RF 50 Ω AC	PNO: Fast 🔸	SENSE:INT	ALIGN OFF Avg Type Avg Hold:	: RMS 1000/1000		7 PM Nov 15, 201 RACE 1 2 3 4 5 TYPE A WWWW DET A N N N N
	IFGain:Low	#Atten: 20 dB				
Ref Offset 40.2 dB 0 dB/div Ref 40.20 dBm					Mkr1 728 -21	.900 MH .940 dBr
0.2					~~~~}	
0.2						
0.2						
200						
.80				¥		
9.8			1		h	-19.00 d
9.8			/			
9.8		and a second second				
9.8						
art 705.00 MHz Res BW 100 kHz	VBM	√ 300 kHz*		Swe	Stop 3 ep 5.333 m	744.00 MH s (8001 pt
G						





RL	rum Analyzer - Element M RF 50 Ω AC			SENSE:INT	ALIGN OFF		03:14:36 PM Nov 15, 20
		1	PNO: Fast ↔ Gain:Low	. Trig: Free Run #Atten: 20 dB	Avg Type: I Avg Hold: 1	000/1000	TRACE 1 2 3 4 TYPE A WWWW DET A N N N
	Ref Offset 40.2 dB Ref 40.20 dBm					Mkr1	768.100 00 MH -21.154 dBi
/9							
0.2							
).2							
).2							
00							
80		.1					
.8		<u> </u>					-19.00 c
9.8							
.8							
9.8							
art 758.0 Res BW 1				√ 300 kHz*		Swoon	Stop 808.00 Mł 6.400 ms (8001 pl
	00 KH2		V.C.V	2 300 KHZ	STATUS	oweep	0.400 ms (800 i pt





	Band 12	2-14, QPSK Modu	ulation, Upper Ba	nd Edge, Measur	ement 4		
				Value	Limit		
				(dBm)	(dBm)	Result	
				-69.859	-52	Pass	

RL	RF 50 Ω	AC CORREC		SENSE:INT	A	LIGN OFF		03:17:46	PM Nov 15, 20
			PNO: Wide ↔ IFGain:High	, Trig: Free R #Atten: 0 dB		Avg Type: I Avg Hold: 2			ACE 2 3 4 S TYPE A WWW DET A NNN
dB/div	Ref -32.00 c	iBm					N	lkr1 804 -69.	.669 MH 859 dBi
-9									
7.0									
2.0									
7.0									
2.0									-52.00 c
7.0									
2.0									
7.0							<u>1</u>		
2.0	vanyanahanahan	with days of which shirts	y de fangelen gebelen ferder fan de fer	n na far an	ejendete opringete	and a family sound	logrange stiel gaais	uyi ulan kiful yirin ahi	u des internet für
7.0									
	.000 MHz								7.000 MH
Res BW	6.8 kHz		#VE	3W 24 kHz*			Sweep	211.7 ms	s (8001 pt





	ctrum Analyzer - Element Materials	Technology				
RL	RF 50 Ω AC	PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 20 dB	ALIGN OFF Avg Type: F Avg Hold: 10	000/1000	02:40:52 PM Nov 15, 2019 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N
10 dB/div Log	Ref Offset 40.2 dB Ref 40.20 dBm				Mkr	1 728.900 MHz -22.289 dBm
30.2						
20.2					n mar	
10.2						
).200						
-9.80						
-19.8				/		-19.00 dBm
-29.8			and a second second			
-39.8						
Start 705.						Stop 744.00 Mills
start 705. #Res BW		VBV	V 300 kHz*		Sweep 5.3	Stop 744.00 MHz 333 ms (8001 pts)
ISG				<b>K</b> STATUS		





Keysight Spec	trum Analyzer - Element Mate RF 50 Ω AC	nais Technology	CENCE ANT			
KL	RF   50 Ω AC		SENSE:INT	ALIGN OFF Avg Type: RMS	03:23:37 PM No TRACE	
		PNO: Fast ↔ IFGain:Low	⊷ Trig: Free Run #Atten: 20 dB	Avg Hold: 1000/	IOOO TYPE A	NNNN
0 dB/div	Ref Offset 40.2 dB Ref 40.20 dBm				Mkr1 768.100 00 -21.738	dBn
30.2						
	mm					
20.2						
10.2						
200						
9.80						
9.8	<b>1</b>					-19.00 dE
9.8						
9.8	L			·····		
49.8						
tart 758.0 Res BW 1			W 300 kHz*		Stop 808.0 Sweep 6.400 ms (80	0 MH 01 pts
SG				STATUS		





	Band 12	-14, 16QAM Mod	ulation, Upper Ba	and Edge, Measu	rement 4		
				Value	Limit		
				(dBm)	(dBm)	Result	
L				-69.849	-52	Pass	

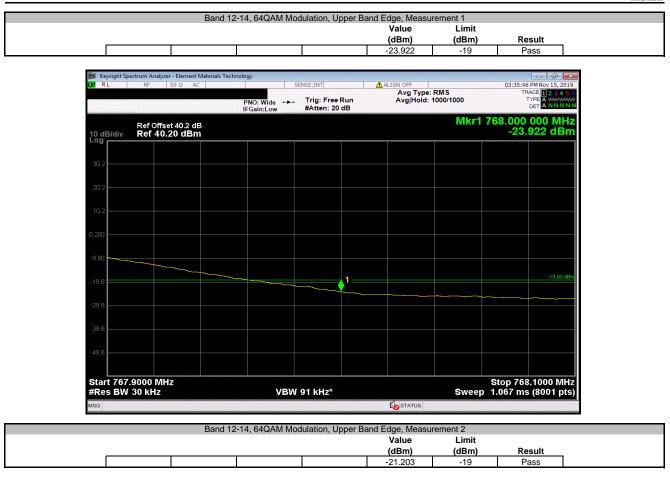
RL	RF	50 Ω AC	CORREC		SENSE:INT		ALIGN OFF		03:21:40	PM Nov 15, 201
				PNO: Wide ↔ FGain:High		Run	Avg Type: Avg Hold: 2		TR	ACE 12345 TYPE A WWWW DET A NNNN
dB/div	Ref -	32.00 dBr	n					N	lkr1 804. -69.	.589 MH 849 dBr
-										
7.0										
2.0										
7.0										
2.0										-52.00 d
7.0										
2.0										
7.0								1		
2 n <mark>Newly</mark>	in the second	li dhu da bha an an	and the second secon	والمتحارية والاردان والدع			n internet internet internet	hilderskinner	unid ingentra suiteretta	witerentialiste
2.0										
7.0										
tart 799.									Stop 80	7.000 MH
Res BW	0.8 KH	Z		#VB	W 24 kHz*		STATUS	sweep	211.7 ms	(8001 pt





	ectrum Analyzer - Element Materials						
XI RL	RF 50 Ω AC	PNO: Fast ↔→→ IFGain:Low	Trig: Free Run #Atten: 20 dB		ype: RMS old: 1000/1000	T	7 PMNov 15, 2019 RACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN
10 dB/div	Ref Offset 40.2 dB Ref 40.20 dBm					Mkr1 728 -21	.900 MHz .337 dBm
30.2							
20.2							
10.2							
.200							
9.80					<mark>/</mark>		-19.00 dB
19.8							-19.00 dB
39.8							
49.8							
Start 705.	00 MHz					Stop	744.00 MH
≉Res BW	100 kHz	VBW	300 kHz*	1		Stop 3 eep 5.333 m	s (8001 pts
SG				To STATU	IS		





a RL	ctrum Analyzer - Element M RF 50 Ω AC			INSE:INT	ALIGN OFF		03:36:21 PM Nov 15, 201
	KF   50.52 AC	PN	O: Fast ↔→ ain:Low	Trig: Free Run #Atten: 20 dB	ALIGN OFF Avg Type Avg Hold:		03:36:21 PM NOV 15, 201 TRACE 1 2 3 4 5 TYPE A WWW DET A N N N N
0 dB/div og r	Ref Offset 40.2 dE Ref 40.20 dBm	3				Mkr1	768.100 00 MH -21.203 dBr
30.2							
20.2							
0.2							
200							
.80							
3.8		1					-19.00 d
).8							
.8							
9.8							
tart 758. Res BW	00 MHz 100 kHz		VBW	300 kHz*		Sweep	Stop 808.00 MH 6.400 ms (8001 pt
G					STATUS		

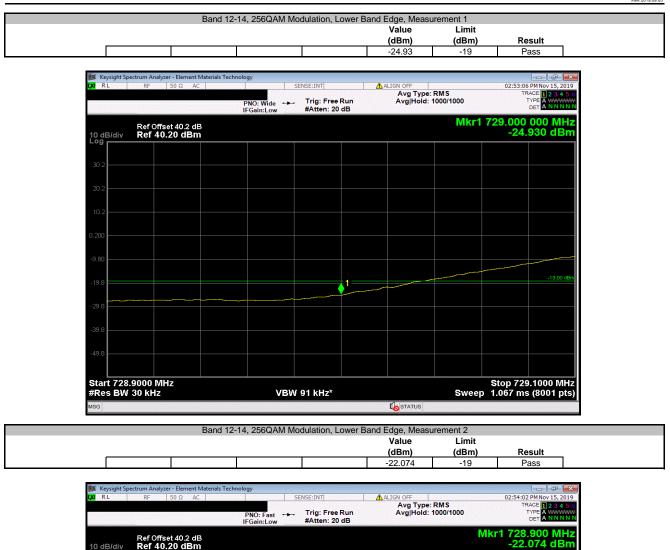




	Band 12	-14, 64QAM Mod	lulation, Upper Ba	ind Edge, Measu	rement 4		
				Value	Limit		
				(dBm)	(dBm)	Result	
				-69.901	-52	Pass	

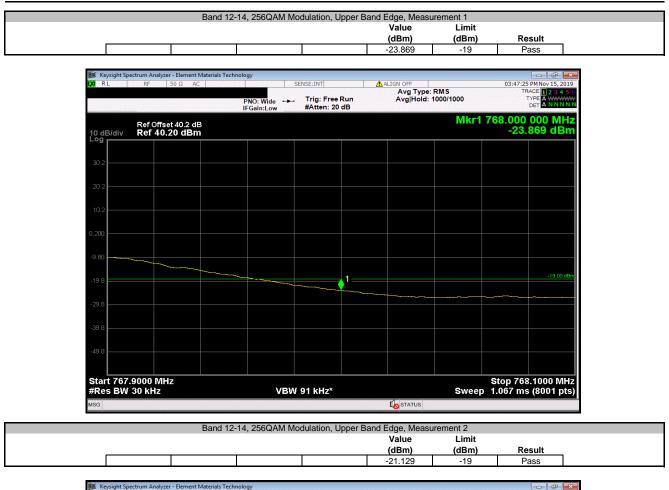
RL	RF 50 Ω A0	C CORREC		SENSE:INT	<u>A</u> /	ALIGN OFF			PMNov 15, 201
			PNO: Wide ↔ Gain:High	. Trig: Free I #Atten: 0 d		Avg Type: Avg Hold: 2		Т	ACE 1 2 3 4 5 TYPE A DET A NNNN
dB/div	Ref -32.00 dBi	m					N	lkr1 806. -69.	.857 MH 901 dBr
og									
7.0									
2.0									
7.0									
2.0									-52.00 d
7.0									
2.0									
7.0									
2.0	n an	en hannan hatad	tak akat takat kata kata kata kata kata	et attraction of the test of the	and a state of the second of	ining a fight have a fight of the	(ten destripping i destrict	high-attine and the	fi i fi tan i na fi ti fi ta fi
7.0									
	.000 MHz			W 04 1/11-*			0	Stop 80	7.000 MH
Res BW	6.8 kHz		#VB	W 24 kHz*		STATUS	sweep	211.7 ms	(8001 pt





	_	PNO: Fast 🔸	Trig: Free Run #Atten: 20 dB	Avg Type: RMS Avg Hold: 1000/1000	TRACE 1 2 3 4 5 TYPE A WWWW DET A N N N N
0 dB/div	Ref Offset 40.2 dB Ref 40.20 dBm				Mkr1 728.900 MH -22.074 dBr
30.2					
20.2					
0.2					
200					
.80					
9.8				1	-19.00 d
9.8					
9.8					
19.8					
tart 705. Res BW	00 MHz 100 kHz	VBW 3	000 kHz*	Swe	Stop 744.00 MH eep 5.333 ms (8001 pt
SG				STATUS	





RL RF 50 Q AC	Technology	ENSE:INT	ALIGN OFF	6	3:47:50 PM Nov 15, 201
	PNO: Fast +++ IFGain:Low	Trig: Free Run #Atten: 20 dB	Avg Type: RM Avg Hold: 100	IS 0/1000	TRACE 1 2 3 4 5 TYPE A DET A NNNN
Ref Offset 40.2 dB 0 dB/div Ref 40.20 dBm				Mkr1 768	3.100 00 MH -21.129 dBr
0.2					
0.2					
00					
30					
1.8					-19.00 d
.8					
).8			******		
3.8					
art 758.00 MHz Res BW 100 kHz	VBW	300 kHz*		Sweep 6.40	top 808.00 MH 0 ms (8001 pt
G	<u> </u>		STATUS		





	Band 12-	14, 256QAM Mod	dulation, Upper B	and Edge, Measu	rement 4		
				Value	Limit		
				(dBm)	(dBm)	Result	
				-69.82	-52	Pass	

RL	RF	50 Ω AC	Aaterials Techno CORREC		S	ENSE:INT		A AI	IGN OFF		03:42:5	4 PM Nov 15, 201
				PNO: Wide IFGain:High	•••	Trig: Free I #Atten: 0 d	Run B		Avg Type: I Avg Hold: 2			RACE 1 2 3 4 5 TYPE A WWWM DET A NNNN
dB/div	Pef -3	2.00 dBn	2							N	lkr1 799 -69	.866 MH .820 dBr
		2.00 001										
7.0												
2.0												
2.0												
7.0												
2.0												-52.00 d
7.0												
2.0												
2.0												
7.0		1										
		A harto o tota	at a tabah sarah			all some of anda to so a	durb and		at de la construction de la	منابع المراجع	une bak betikende	a an a kon a ta
2.0	and and a start of the		an a	alle selected and all the		And the state of the second	******	1		noninina manina ina ina ina ina ina ina ina ina in	AND AND A DESCRIPTION	and a second
7.0												
	.000 MH			-44						<b>a</b>	Stop 8	07.000 MH
Res BW	6.8 kHz	-		#	VВV	V 24 kHz*			STATUS	sweep	211.7 m	s (8001 pt