BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER





 Port 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, High Side, MultiCarrier Test Case 5, AWS Band 13.3W 5 MHz BW (2112.5, 2117.5 and 2197.5 MHz)

 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 Result

 1
 2200
 -22.71
 -19
 Pass

Keysight Spe	ctrum Analyzer - Element Materia	Is Technology				- 7
LXI RL	RF 50 Ω DC C	CORREC	SENSE:INT	ALIGN AUTO LIGHT	MAC	11:30:16 AM Oct 01, 2022
		PNO: Wide ↔→ IFGain:Low	Trig: Free Run #Atten: 20 dB	Avg Hold: 50	00/500	TYPE A WWWWW DET A N N N N N
10 dB/div	Ref Offset 41.5 dB Ref 41.50 dBm				Mkr1 2	2.200 000 00 GHz -22.712 dBm
LUg						
31.5						
21.5						
21.5						
11.5		\				
1.50						
-8.50						
-18.5			1			DL1 -19.00 dBm
-28.5						
-38.5						
40.5						
-40.5						
Center 2.2	200000 GHz					Span 2.000 MHz
#Res BW	51 kHz	#VB	W 160 kHz*		#Sweep	1.067 ms (8001 pts)
MSG				STATUS		

BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER





 Port 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, High Side, MultiCarrier Test Case 5, AWS Band 13.3W 5 MHz BW (2112.5, 2117.5 and 2197.5 MHz)

 Frequency
 Measured
 Max Value
 Limit

 Range
 Freq (MHz)
 (dBm)
 Result

 3
 2202.03
 -21.81
 -19
 Pass

Keysight Specific Activity	ectrum Analyzer - Element M	laterials Technol	logy						
LXI RL	RF 50 Ω DC	CORREC		SENSE:INT	ALIG	N AUTO LIGHT		11:31:37	AM Oct 01, 2022
			PNO: Fast ↔ IFGain:Low	Trig: Free #Atten: 20	Run dB	Avg Type: 1 Avg Hold: 5	RMS 600/500	IF	ACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.5 dB Ref 41.50 dBm						Mkr	2.202 0 -21.	27 5 GHz 813 dBm
LUg									
31.5									
21.5									
21.5									
11.5									
1.50									
1.50									
-8.50									
10 5 1									DL1 -19.00 dBm
-10.5									
-28.5		·****		مر المراجع المراجع المراجع المراجع الم					
-38.5									
55.5									
-48.5									
Start 2.20 #Res BW	200 GHz 1.0 MHz		#VE	BW 3.0 MHz	*		#Sweer	Stop 2.	22200 GHz (8001 pts)
MSG						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
Block - DC	Fairview Microwave	SD3379	AMM	2022-09-09	2023-09-09
Block - DC	Fairview Microwave	SD3239	ANC	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

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) and RSS Gen 6.13, 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), RSS-133 6.5 (ii), FCC 27.53 (h) (1), RSS-139 5.6, the power of any emission outside of the Authorized operating frequency range cannot exceed -13sBm for a 1 MHz measurement bandwidth. The limit is adjusted To -19dBm [-13 dBm -10log (4)] per FCC KDB 662911D01v02r01 because the BTS may operate as a 4 port MIMO.

RF conducted emissions testing was performed on one port. The AHFIB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in original certification report) and port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

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.



					TbtTx 2022.06.03.0	XMit 2022.02.07.0
EUT:	AHFIB			Work Order:	NOKI0049	
Serial Number:	K9181401111			Date:	29-Sep-22	
Customer:	Nokia of America Corporation			Temperature:	20.4 °C	
Attendees:	John Rattanavong			Humidity:	43.3% RH	
Project:	None			Barometric Pres.:	1028 mbar	
Tested by:	Marty Martin	Power:	54 VDC	Job Site:	TX07	
TEST SPECIFICATI	ONS		Test Method			
FCC 27:2022			ANSI C63.26:2015			
RSS-133 Issue 6: 20	013+A12018		RSS-133 Issue 6: 2013+A12018			
RSS-139 Issue 4: 20	022		RSS-139 Issue 4: 2022			
COMMENTS						

All measurement path losses were accounted for in the reference level offest including any attenuators, filters and DC blocks. The Band n25 carrier was enabled at maximum power (40 watts/carrier). The Band n66 carrier was enabled on the middle channel (2155MHz) at 40 watts with the same channel bandwidth and modulation type as the Band n25 carrier. The port power was set at the maximum level of 80 Watts [Band n25 carrier (40W) and Band n66 carrier (40W)]. DEVIATIONS FROM TEST STANDARD

None							
Configuration #	1, 2, 3, 4	Signature	ty Marti				
			Frequency	Measured	Max Value	Limit	
			Range	Freq (MHz)	(dBm)	< (dBm)	Result
Port 1, NR, Band n25	5, 1930 - 1995 MHz						
:	30 MHz						
	QPSK						
		Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	0.07	-59.31	-49	Pass
		Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	0.15	-63.84	-39	Pass
		Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	3098.06	-26.74	-19	Pass
		Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	4003.5	-40.57	-19	Pass
		Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	21558.55	-34.17	-19	Pass
	16QAM						
		Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	0.07	-59.64	-49	Pass
		Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	0.15	-63.7	-39	Pass
		Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	3210.73	-26.97	-19	Pass
		Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	4008.73	-40.59	-19	Pass
		Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	21540.55	-34.02	-19	Pass
	64QAM						
		Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	0.07	-59.27	-49	Pass
		Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	0.15	-63.85	-39	Pass
		Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	3180.71	-27.33	-19	Pass
		Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	4028.68	-40.66	-19	Pass
		Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	21537.4	-34.3	-19	Pass
	256QAM						
		Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	0.07	-59.4	-49	Pass
		Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	0.15	-63.27	-39	Pass
		Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	3117.64	-27.28	-19	Pass
		Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	3995.43	-40.67	-19	Pass
		Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	21945.1	-34.11	-19	Pass



Frequ	lency	Measured Freq (MHz)	Max Value	Limit	Result
9 kHz -	150 kHz	0.07	-59.31	-49	Pass
Keysight Spectrum Analyzer - Element M	aterials Technology	SENSE-INT	ALIGN AUTO LIGHT		03:24:25 AM Sep 30, 2022
	PNO: Wide IFGain:Low	Trig: Free Run Atten: 6 dB	Avg Type: Avg Hold: 1	RMS 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N
Ref Offset 20.3 dB 10 dB/div Ref 0.00 dBm				м	kr1 68.044 kHz -59.306 dBm
		The second se			
-10.0					
20.0					
-20.0					
-30.0					
-40.0					
-40.0					
-50.0					DL1 -49.00 dBm
-60.0		_ ∳ '			
-70.0					Λ
-80.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Am	
-90.0					
Start 9.00 kHz #Res BW 1.0 kHz	#\	/BW 3.0 kHz*		Sweep 5	Stop 150.00 kHz 5.00 ms (8001 <u>pts)</u>
MSG			STATUS		

Port 1, NR, Band n25, 1930 - 199	5 MHz, 30 MHz,	QPSK, Mid Chan	nel, 1962.5 MHz		
Frequency	Measured	Max Value	Limit		
Range	Freq (MHz)	(dBm)	< (dBm)	Result	
150 kHz - 20 MHz	0.15	-63.84	-39	Pass	

eysight spectrum Analyzer - Element Waterials T	centrology	and a start		
KL   KF   50 \$2 DC	PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 10 dB	ALIGN AUTO LIGHT Avg Type: RMS Avg Hold: 100/10	03:29:08 AM Sep 30, TRACE 1 2 3 TYPE A WWY DET A NN
Ref Offset 19.4 dB B/div Ref -6.00 dBm				Mkr1 150.0 k -63.838 dl
				DL1 -39.00
1				
←				
And the state of t	lan najara kan sadi yan su sadi wana su	an pala ngala ka di na matangani	lating the for the distance of the standard of the standard of the sec	<u>องการกระสุของสมบันวางส</u> ่งอนุกรุง
rt 150 kHz es BW 10 kHz	#VB	W 30 kHz*		Stop 20.000 N Sweep 79.47 ms (8001



	Frequency		Measured Freq (MHz)	Ma	x Value dBm)	Limit < (dBm)	Result
	20 MHz - 3.5 GI	Ηz	3098.06	-	26.74	-19	Fail
Keysight Spectrum Ar	nalyzer - Element Materials Teo	hnology					
K RL RF	50 Ω DC		SENSE:INT	ALIGN	AUTO LIGHT   Avg Type:	RMS	03:42:48 AM Sep 30, 202 TRACE 1 2 3 4 5
		PNO: Fast	Trig: Free Run #Atten: 20 dB		Avg Hold:	100/100	DET A NNNN
D-60		n Sumeon				Mk	r1 3.098 1 GH
10 dB/div Ref	50.80 dBm						-26.744 dBr
Log							
40.8							
30.8				1	î		
20.8							
10.8							
0.800							
-9.20							
-19.2							DL1 -19.00 dE
							<b>♦</b> ¹
-29.2			antipe granter and an inter state of the state	Summer	- And a state of the state of t		
and a state of the	( dealed by , some loss of second states						
-39.2							
start 20 MHz #Res BW 1.0 M	Hz	#VB	W 3.0 MHz*			Sweep 4	Stop 3.500 GH 800 ms (8001 pt
MSG					STATUS		

Port 1, NR, Band n25, 1930 - 19	995 IVIHZ, 30 IVIHZ,	QPSK, Mid Chan	nei, 1962.5 MHZ	
Frequency	Measured	Max Value	Limit	
Range	Freq (MHz)	(dBm)	< (dBm)	Result
3.5 GHz - 13 GHz	4003.5	-40.57	-19	Pass

RL	RF	50 Ω DC			S	ENSE:INT		ALIGN AUTO LIGHT		03	:55:44 AM Sep 30, 202
				PNO: Fast IFGain:Low	•••	Trig: Free #Atten: 20	Run ) dB	Avg Type: Avg Hold:	RMS 100/100		TRACE 1 2 3 4 5 TYPE A WWWW DET A NNNN
) dB/div	Ref Offs Ref 30	set 24.9 dE 9.90 dBm	3							Mkr1 4.0	003 500 GH 40.571 dBn
20.9							<u> </u>				
0.9											
900											
10											
9.1											DL1 -19.00 db
9.1											
3.1	1		<u> </u>								
9.1											
9.1											
art 3.50	0 GHz				6) /D)		*		Sur	Store 16 00	op 13.000 GH

### element TKTV 2022 06 08.0 MM 2022 02 20 70

Frequ	iency	Measured	Max Value	Limit	
Rar	nge	Freq (MHz)	(dBm)	< (dBm)	Result
13 GHz -	22 GHz	21558.55	-34.17	-19	Pass
Keysight Spectrum Analyzer - Element Ma	terials Technology				
XIRL RF 50Ω DC		SENSE:INT	ALIGN AUTO LIGHT		04:07:28 AM Sep 30, 202
	PNO: Fast + IFGain:Low	Trig: Free Run #Atten: 6 dB	Avg Type: Avg Hold:	RMS 100/100	TRACE 1 2 3 4 5 TYPE A WWWW DET A N N N N
Ref Offset 44.5 dB				Mkr1	21.558 55 GH
Log					-04.100 0.01
30.5					
20.5					
10.5					
0.500					
-9.50					
-19.5					DL1 -19.00 dB
-29.5					1_
					Y.
-39.5					
-49.5					
Start 13.000 GHz #Res BW 1.0 MHz		BW 3.0 MHz*		Sweep_16	Stop 22.000 GH

Port 1, NR, Band n25, 1930 - 19	95 MHz, 30 MHz, 1	16QAM, Mid Char	nnel, 1962.5 MHz		
Frequency	Measured	Max Value	Limit		
Range	Freq (MHz)	(dBm)	< (dBm)	Result	_
9 kHz - 150 kHz	0.07	-59.64	-49	Pass	l i

eysight Spectrum Analyzer - Element Ma	terials Technology	and a start		
KL   RF   50 Ω DC	PNO: Wide + IEGain:Low	Trig: Free Run Atten: 6 dB	ALIGN AUTO LIGHT Avg Type: RMS Avg Hold: 100/100	03:25:45 AM Sep 30, 2 TRACE 1 2 3 4 TYPE A WWW DET A NN N
Ref Offset 20.3 dB IB/div Ref 0.00 dBm				Mkr1 68.044 k -59.637 dE
				DL1 -49.0
man -				
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
			m	
t 9.00 kHz s BW 1.0 kHz	#\	/BW 3.0 kHz*	Sw	Stop 150.00 l eep 56.00 ms (<u>8001</u>
			STATUS	



P	ort 1 NR Band n25 1930 - 1	995 MHz 30 MHz	16QAM Mid Char	nel 1962 5 MH;	7
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
15	0 kHz - 20 MHz	0.15	-63.7	-39	Pass
Keysight Spectrum Analyzer - E	ement Materials Technology	SENSE:INT	ALIGN AUTO LIGHT		03:30:14 AM Sep 30, 2022
	PNO: Fast ↔ IFGain:Low	→ Trig: Free Run #Atten: 10 dB	Avg Type: Avg Hold: 1	RMS 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNN
Ref Offset 1 10 dB/div Ref -6.00	9.4 dB dBm				Mkr1 155.0 kHz -63.704 dBm
Log		l l			
-16.0					
-26.0					
-36.0					
-30.0					DL1 -39.00 dBm
-46.0					
-56.0					
-00.0					
-76.0					
No.					
-86.0	ya Manani ya kata nganan kata kata ngananga ana si dan kata pananga	inginal frequencies and a second of	hininterneteringi, pantainpin	Rei Lanzan fan se Ny friedd Ny dae ar syn yr	Kyrgerapti franski franski pisatelja
-96.0					
Start 150 kHz #Res BW 10 kHz	#VE	30 kHz*		Sweep 7	Stop 20.000 MHz 9.47 ms (8001 pts)
MSG	// • •		STATUS		
P	ort 1, NR, Band n25, 1930 - 1	995 MHz, 30 MHz, 1	16QAM, Mid Char	nnel, 1962.5 MHz	Ζ
	Frequency	Measured	Max Value	Limit	Desult
20	MHz - 3.5 GHz	3210 73	(dBm)	< (dBm)	Kesult Fail
20	WI 12 - 3.3 GHZ	3210.73	-20.97	-13	Fall

Keysight Spe	ctrum Analyzer - Element I	Materials Technology	y						
V RL	R- 50 Ω DC	PI	NO: Fast ↔→ Gain:Low	Trig: Free R #Atten: 20 c	lun dB	Avg Typ Avg Hold	e: RMS 1: 100/100	03:44:59 TF	AM Sep 30, 2022 RACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.2 dE Ref 50.80 dBm	3						Mkr1 3.2 -26.	10 7 GHz 972 dBm
				Ĭ					
40.8									
30.8					<mark>''</mark>				
20.0									
20.0						ľ			
10.8									
0.800									
-9.20									
-19.2									DL1 -19.00 dBm
-29.2						<u> </u>	and the set of the set	televen and the second second second	
					and a state of the				
-39.2									
Start 20 h	1H7							Ston	3 500 GHz
#Res BW	1.0 MHz		#VBV	V 3.0 MHz*			Swe	ep 4.800 ms	s (8001 pts)
MSG		- and a standard				STATUS			



Frequer	ncy	Measured	Max Value	Limit		Pocult
3 5 GHz - 1	3 GHz	4008 73	-40.59	-19	1	Pass
0.0 012 1	0 0112	4000.10	10.00	10	-	1 400
Keysight Spectrum Analyzer - Element Materi	als Technology					
LXI RL RF 50Ω DC		SENSE:INT	ALIGN AUTO LIGHT	- DMA	04:0	0:16 AM Sep 30, 2022
	PNO: Fast IFGain:Low		Avg Type: Avg Hold:	RMS 100/100		TYPE A WWWWW DET A NNNNN
Ref Offset 24.9 dB 10 dB/div Ref 30.90 dBm				Mk	r1 4.00 -4)8 725 GHz 0.590 dBm
Log		The second secon				
20.0						
20.0						
10.9						
0.900						
-9.10						
-19.1						DL1 -19.00 dBm
-29.1						
1						
-39.1						
49.4						
-40.1						
-59.1						
Start 3.500 GHz					Sto	o 13.000 GHz
#Res BW 1.0 MHz	#	BW 3.0 MHz*		Sweep	16.00 m	is (20001 pts)
MSG			STATUS			

Port 1, NR, Band n25, 1930 - 199	5 MHz, 30 MHz, 1	6QAM, Mid Char	nel, 1962.5 MHz		
Frequency	Measured	Max Value	Limit		
Range	Freq (MHz)	(dBm)	< (dBm)	Result	
13 GHz - 22 GHz	21540.55	-34.02	-19	Pass	

N 30 22 DC				NITO LIGHT 04:09:18 AM Sep 30, 202			
	PNO: Fast +++ IFGain:Low	Trig: Free Run #Atten: 6 dB	Avg Type: F Avg Hold: 1	RM S 00/100	TF	ACE 1 2 3 4 5 0 TYPE A WWWW DET A NNNN	
Ref Offset 44.5 dB dB/div Ref 40.50 dBm				Mł	(r1 21.54 -34.	0 55 GHz 022 dBm	
0.5							
0.5							
0.5							
500							
.50							
9.5						DL1 -19.00 dBn	
9.5						1	
9.5							
9.5							
tart 13.000 GHz Res BW 1.0 MHz	#VB	W 3.0 MHz*		Sween	Stop 2	22.000 GHz (20001 pts	



	Frequency Range	Measured Freg (MHz)	Max Value (dBm)	Limit < (dBm)	Result
9	kHz - 150 kHz	0.07	-59.27	-49	Pass
Keysight Spectrum Analyzer - El	ement Materials Technology				67
LXI RE 50 §	2 DC	SENSE:INT	ALIGN AUTO LIGHT Avg Type:	RMS	03:22:53 AM Sep 30, 2022 TRACE 1 2 3 4 5 6
	PNO: Wide IFGain:Low	Atten: 6 dB	Avg Hold:	100/100	DET A NNNN
Ref Offset 20).3 dB Bm			М	kr1 68.044 kHz -59.274 dBm
Log		The second secon			
-10.0					
-20.0					
-30.0					
40.0					
-40.0					
-50.0					DL1 -49.00 dBm
		≜ 1			
-60.0					
70.0					
-70.0	~~				A
-80.0	- min				
			mm	human	~~~
-90.0					
Start 9.00 kHz					Stop 150.00 kHz
#Res BW 1.0 kHz	3	≠VBW 3.0 kHz*		Sweep 5	6.00 ms (8001 pts)
MSG			STATUS		

Frequency	Measured	Max Value	Limit	
Range	Freq (MHz)	(dBm)	< (dBm)	Result
150 kHz - 20 MHz	0.15	-63.85	-39	Pass

RL	RE 50 S	DC		S	ENSE:INT	ALIGN	AUTO LIGHT		03:31:52	AM Sep 30.2
			PNO: Fast IFGain:Low		Trig: Free Ru #Atten: 10 dB	n	Avg Type: I Avg Hold: 1	RMS 00/100	TF	ACE 1 2 3 4 TYPE A WWW DET A NNN
dB/div	Ref Offset 19 Ref -6.00 (9.4 dB IBm							Mkr1 1 -63.	50.0 kl 853 dE
					Ĭ					
										DL1 -39.0
1										
New York	*****	and the second secon	ander gester die bester gester die bester gester die bester die bester die bester die bester die bester die bes			ian yakati ya kata da	in a start of the st		manda	ta per la sectada da p
rt 150					M 20 kHz*			Curee	Stop 2	0.000 N



	Frequency	Measured	Max Value	Limit	Peoult
	20 MHz - 3 5 GHz	3180 71	(aBm)	< (asm)	Fail
Keysight Spectrum	Analyzer - Element Materials Technology		•		
LXI RL RF	F 50 Ω DC	SENSE:INT	ALIGN AUTO LIGHT	BMA	03:46:43 AM Sep 30, 2022
	PNO: Fast IFGain:Lov	r →→ Trig: Free Run w #Atten: 20 dB	Avg Type: Avg Hold:	RMS 100/100	
Ref 10 dB/div Rei	f Offset 41.2 dB f 50.80 dBm			Mkr	1 3.180 7 GHz -27.328 dBm
40.8					
30.8			Î l		
20.8					
10.8					
0.800					
0.000					
-9.20					
					DL1 -19.00 dBm
-19.2					1
-29.2			And Annon		
	An in the second se				
-39.2					
Start 20 MHz	MH2	#VRM 3.0 MHz*		Sween 4	Stop 3.500 GHz
MSG			STATUS	- Gweep 4.0	see ins (see 1 prs)
	Port 1 NR Band p25, 103	0 - 1995 MHz 30 MHz 4	640AM Mid Cha	nnel 1962 5 MHz	
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
1	5 E C L = 45 C L =	1 1000 60	1066	10	Dace

Port 1, NR, Band n25, 1930 - 199	5 MHz, 30 MHz, 6	64QAM, Mid Char	nel, 1962.5 MHz	
Frequency	Measured	Max Value	Limit	
Range	Freq (MHz)	(dBm)	< (dBm)	Result
3.5 GHz - 13 GHz	4028.68	-40.66	-19	Pass

RI	RE	50.0 DC			SENSEIINT	Διτ	GN AUTO LIGHT		04.02	53 AM Sep 30 202
~~	N	10032 00		PNO: Fast ↔ IFGain:Low	Trig: Free #Atten: 2	e Run 0 dB	Avg Type: Avg Hold: 1	RMS 00/100	01.02	TRACE 1 2 3 4 5 TYPE A WWW DET A NNNN
dB/div	Ref Off Ref 30	set 24.9 dE).90 dBm	3					l	Mkr1 4.02 -4(8 675 GH).659 dBr
0.9										
0.9										
00										
10										
9.1										DL1 -19.00 dl
9.1	. 1									
		~~~~	~~~~					-		
9.1										
9.1										
art 3.50 les BW	0 GHz 1.0 MH	z		#V	BW 3.0 MH;	 z*		Swee	Stop 20 16.00 m	13.000 GH

### element TKTV 2022 06 08.0 MM 2022 02 20 70

	Frequency	1	Measured	Max Value	Limit	Beault
-	Kange		Freq (WHZ)	(dBm)	< (dBm)	Result
	15 GHz - 22 C	DT 12	21557.4	-04.0	-19	Fass
Keysight Spect	rum Analyzer - Element Materials	echnology	center tard			
	KF 50.52 DC	PNO: Fast	Trig: Free Run #Atten: 6 dB	Aug Type: Avg Hold: 1	RMS 100/100	04:11:17 AM SEP 30, 202 TRACE 1 2 3 4 5 TYPE A WWWW DET A N N N N
10 dB/div	Ref Offset 44.5 dB Ref 40.50 dBm	IFGall.Low	#Atten out		MI	r1 21.537 40 GH -34.303 dBn
			Ť			
30.5						
20.5						
20.0						
10.5						
0.500						
0.50						
-0.00						
-19.5						DE1 -19.00 dB
-29.5						1_
-39.5						<b>X</b>
-49.5						
Start 13.00	0 GHz					Stop 22.00 <u>0 GH</u>
#Res BW 1	.0 MHz	#VB	W 3.0 MHz*		Sweep	16.00 ms (20001 pts
MSG				STATUS		

Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, 256QAM, Mid Channel, 1962.5 MHz							
	Frequency	Measured	Max Value	Limit			
	Range	Freq (MHz)	(dBm)	< (dBm)	Result		
	9 kHz - 150 kHz	0.07	-59.4	-49	Pass		

RL RF 50Ω DC		SENSE:INT	ALIGN AUTO LIGHT	03:26:59 AM Sep 30, 20
	PNO: Wide ← IFGain:Low	Trig: Free Run Atten: 6 dB	Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 TYPE A WWW DET A N N N
Ref Offset 20.3 dB B/div Ref 0.00 dBm				Mkr1 68.044 kH -59.403 dBi
		Ĭ		
				DL1 -49.00
		<b>▲</b> 1		
) 		- Á		
	m	- I have		
Int 9.00 kHz	#\/	(B)A( 3.0 kHz*		Stop 150.00 k



	Port 1, NR, Band n25, 193	30 - 1995 MHz, 30 MHz, 2	256QAM, Mid Cha	nnel, 1962.5 MH	z
	Frequency	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	150 kHz - 20 MHz	0.15	-63.27	-39	Pass
Keysight Spectrum Analy	zer - Element Materials Technology	CENCEANT			
	PNO: Fa	ist Trig: Free Run ow #Atten: 10 dB	Aug Type: Avg Hold:	RMS 100/100	TRACE 2 3 4 5 6 TYPE A WWWW DET A N N N N
Ref Offe 10 dB/div Ref -6	set 19.4 dB .00 dBm				Mkr1 150.0 kHz -63.273 dBm
		Ĭ			
-16.0					
-26.0					
-36.0					DL1 -39.00 dBm
-46.0					
-56.0					
-66.0					
-76.0					
-86.0	ŧġŗſſĬĬŗġĬġĬŧġĬŧĸĸijĬġſijŔĸijġĬŖſĬĸĬġġſĬĬŢĸĸŊĸŔĸġĬŗijĬĸĸŊĸŔĬŔĿĸ	สาวีระบบให้ที่มาที่ที่จะเข้าแห่ง <mark>สาวมารถหลางสาวที่จะไ</mark> ด้ระบบการกำร	eta Mulanta nyainy pilaniny kanatinya.	an filian ny manana amin'ny mandrina dia manana	han na shina na n
-96.0					
Start 150 kHz #Res BW 10 kHz		#VBW 30 kHz*		Sweep 7	Stop 20.000 MHz 9.47 ms (8001 pts)
MSG			STATUS		
	Port 1, NR, Band n25, 193	30 - 1995 MHz, 30 MHz, 2	256QAM, Mid Cha	nnel, 1962.5 MH	lz
	Frequency	Measured	Max Value	Limit	Booult
	20 MHz - 3 5 GHz	3117 64	-27 28	< (авт) -19	Fail

Keysight S	pectrum Analyzer - Element Materials	Technology	ENCE-INT	ALTON			02:49:21	AM Son 20, 20
ĸ	N 3032 DC	PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 20 dB	ALION	Avg Type: F Avg Hold: 1	RMS 00/100	03.40.21	ACE 1 2 3 4 5 TYPE A WWW DET A NNN
) dB/div	Ref Offset 41.2 dB Ref 50.80 dBm						Mkr1 3.1 -27.	17 6 GH 277 dBi
19			Ĭ					
J.8								
).8				- 14	<u>n</u>			
1.8								
).8								
20								
.2								DL1 -19.00
.2				Л.,,,	Ц.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	a li Dagga di Mana dag		
.2								
art 20	MHz						Stop	3.500 GI
es BW	/ 1.0 MHz	#VBI	V 3.0 MHz*			Sw	eep 4.800 ms	(8001 p
e Provessione					STATUS		and and a she and an a she was	and a stranger



Freque	ncy	Measured	Max Value	Limit			
Rang	e	Freq (MHz)	(dBm)	< (dBm)	Result		
3.5 GHz -	13 GHz	3995.43	-40.67	-19	Pass		
Keysight Spectrum Analyzer - Element Mate	rials Technology	SENSE:INT	ALIGN AUTO LIGHT		04:04:22 AM Sep 30, 202		
	PNO: Fast	- Trig: Free Run #Atten: 20 dB	Avg Type: Avg Hold:	RMS 100/100	TRACE 1 2 3 4 5 TYPE A WWW DET A N N N N		
Ref Offset 24.9 dB 10 dB/div Ref 30.90 dBm			Mkr1 3.995 425 GHz -40.673 dBm				
		The second secon					
20.9							
10.9							
0.900							
-9.10							
-19.1					DL1 -19.00 dB		
-29.1							
-39.1							
	man and the second		-				
-49.1							
50.4							
-59.1							
Start 3.500 GHz					Stop 13.000 GH		
#Res BW 1.0 MHz	#VE	SW 3.0 MHz*		Sweep 16	.00 ms (20001 pts		

Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, 256QAM, Mid Channel, 1962.5 MHz							
	Frequency	Measured	Max Value	Limit			
	Range	Freq (MHz)	(dBm)	< (dBm)	Result		
	13 GHz - 22 GHz	21945.1	-34.11	-19	Pass		

🔤 Keysight Sj	pectrum Ana	lyzer - Element N	Materials Technol	ogy						
LXI RL	RF	50 Ω DC			SENSE:INT	ALIGN	AUTO LIGHT		04:12:56	AM Sep 30, 2022
			1	PNO: Fast ↔ FGain:Low	Trig: Free R #Atten: 6 df	lun B	Avg Type:   Avg Hold: 1	RMS 00/100	TF	ACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Of Ref 4	fset 44.5 dE 0.50 dBm	3					Mł	r1 21.94 -34.	5 10 GHz 113 dBm
					Ĭ					
30.5										
20.5										
10.5										
0.500										
0.50										
-9.50										DL1 -19.00 dBm
-19.5										
-29.5										
-39.5	-									alessa at the second
-49.5										
Start 13. #Res BW	000 GH:	z		#VB	W 3.0 MHz*			Sweep	Stop 2	22.000 GHz (20001 pts)
MSG	en en en en						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
Block - DC	Fairview Microwave	SD3379	AMM	2022-09-09	2023-09-09
Block - DC	Fairview Microwave	SD3239	ANC	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

#### **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) and RSS Gen 6.13, 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), RSS-133 6.5 (ii), FCC 27.53 (h) (1), RSS-139 5.6, the power of any emission outside of the Authorized operating frequency range cannot exceed -13sBm for a 1 MHz measurement bandwidth. The limit is adjusted To -19dBm [-13 dBm -10log (4)] per FCC KDB 662911D01v02r01 because the BTS may operate as a 4 port MIMO.

RF conducted emissions testing was performed on one port. The AHFIB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in original certification report) and port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

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/1kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.



EUT: AHFIB Serial Number: K9181401111 Customer: Nokia of America Corporation Attendees: John Rattanavong Beroicati None Work Order: NOKI0049 Date: 29-Sep-22 Temperature: 20.4 °C Humidity: 43.3% RH Barometric Pres.: 1028 mbar Project: None Tested by: Marty Martin TEST SPECIFICATIONS Power: 54 VDC Test Method Job Site: TX07 Т ANSI C63.26:20 FCC 27:2022 RSS-133 Issue 6: 2013+A12018 RSS-133 Issue 6: 2013+A12018 RSS-139 Issue 4: 2022 COMMENTS RSS-139 Issue 4: 2022 All measurement path losses were accounted for in the reference level offest including any attenuators, filters and DC blocks. The Band n66 carrier was enabled at maximum power (40 watts/carrier). The Band n25 carrier was enabled on the middle channel (1962.5MHz) at 40 watts/carrier). The Band in a construction type as the Band in 66 carrier. The port power was set at the maximum level of 80 Watts [Band n25 carrier (40W) and Band n66 carrier (40W)]. DEVIATIONS FROM TEST STANDARD None Monty Marti Configuration # 1, 2, 3, 4 Signature Frequency Measured Max Value Limit Range < (dBm) Freq (MHz) Result (dBm) Port 1, NR, Band n25, 1930 - 1995 MHz 30 MHz OPSK Mid Channel, 1962.5 MHz 9 kHz - 150 kHz 0.07 -59.31 Pass -49 Mid Channel, 1962.5 MHz Mid Channel, 1962.5 MHz 150 kHz - 20 MHz 20 MHz - 3.5 GHz 0.15 3098.06 -63.84 -26.74 -39 -19 Pass Pass Mid Channel, 1962.5 MHz 3.5 GHz - 13 GHz 13 GHz - 22 GHz 4003.5 -40.57 -19 Pass Mid Channel, 1962.5 MHz 21558.55 -34.17 -19 Pass 16QAM Mid Channel, 1962.5 MHz 9 kHz - 150 kHz 0.07 -59.64 Pass -49 Mid Channel, 1962.5 MHz Mid Channel, 1962.5 MHz 150 kHz - 20 MHz 20 MHz - 3.5 GHz 0.15 3210.73 -63.7 -26.97 -39 Pass -19 Pass 3.5 GHz - 13 GHz 13 GHz - 22 GHz 4008.73 21540.55 -40.59 -34.02 -19 -19 Pass Pass Mid Channel, 1962.5 MHz Mid Channel, 1962.5 MHz 64QAM Mid Channel, 1962.5 MHz 9 kHz - 150 kHz 0.07 -59.27 -49 Pass Mid Channel, 1962.5 MHz 150 kHz - 20 MHz 20 MHz - 3.5 GHz 0.15 -63.85 -27.33 -39 Pass 3180.71 Mid Channel, 1962.5 MHz -19 Pass 3.5 GHz - 13 GHz 13 GHz - 22 GHz Mid Channel, 1962.5 MHz 4028.68 -40.66 -19 Pass Mid Channel, 1962.5 MHz 21537.4 -34.3 -19 Pass 256QAM Mid Channel, 1962.5 MHz 9 kHz - 150 kHz 0.07 -59.4 -49 Pass 0.15 3117.64 -63.27 -27.28 Mid Channel, 1962.5 MHz 150 kHz - 20 MHz -39 Pass Mid Channel, 1962.5 MHz 20 MHz - 3.5 GHz -19 Pass 3.5 GHz - 13 GHz 13 GHz - 22 GHz 3995.43 21945.1 -40.67 -34.11 -19 -19 Pass Pass Mid Channel, 1962.5 MHz Mid Channel, 1962.5 MHz



Frequ	lency	Measured Freq (MHz)	Max Value	Limit	Result
9 kHz -	150 kHz	0.07	-59.31	-49	Pass
Keysight Spectrum Analyzer - Element M	aterials Technology	SENSE-INT			03:24:25 AM Sep 30, 2022
	PNO: Wide IFGain:Low	Trig: Free Run Atten: 6 dB	Avg Type: Avg Hold: 1	RMS 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N
Ref Offset 20.3 dB 10 dB/div Ref 0.00 dBm				м	kr1 68.044 kHz -59.306 dBm
		The second se			
-10.0					
20.0					
-20.0					
-30.0					
-40.0					
-40.0					
-50.0					DL1 -49.00 dBm
-60.0		_   <b>∳ '</b>			
-70.0					Λ
-80.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Am	
-90.0					
Start 9.00 kHz #Res BW 1.0 kHz	#\	/BW 3.0 kHz*		Sweep 5	Stop 150.00 kHz 5.00 ms (8001 <u>pts)</u>
MSG			STATUS		

Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, QPSK, Mid Channel, 1962.5 MHz								
	Frequency							
	Range	Freq (MHz)	(dBm)	< (dBm)	Result			
	150 kHz - 20 MHz	0.15	-63.84	-39	Pass			

N RE 50.0 DC		CENCE-INT			02:20:05	AM Son 20 20
	PNO: Fast ↔→	Trig: Free Run #Atten: 10 dB	Avg Type: I Avg Hold: 1	RM S 00/100	100.29.00 TR	ACE 1 2 3 4 TYPE A WWW DET A NNN
Ref Offset 19.4 dB B/div Ref -6.00 dBm					Mkr1 1 -63.	50.0 kl 838 dB
						DL1 -39.00
1						
<u></u>						
Manager Manager and the second state of the se	nnandaritetus (millataise	un attan 1. Ja. It. In discontrationary	ildentederinderinderinderinderinderinder			
rt 150 kHz	#\/B	M 30 kHz*		Sween	Stop 2	20.000 M



	Frequency		Measured Freq (MHz)	М	ax Value (dBm)	Limit < (dBm)	Result
	20 MHz - 3.5 GH	Ηz	3098.06		-26.74	-19	Pass
							· · ·
Keysight Spectrum	Analyzer - Element Materials Tec	hnology					
RL RF	= 50 Ω DC		SENSE:INT	ALIGN		RMS	03:42:48 AM Sep 30, 2022 TRACE 1 2 3 4 5 6
		PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 20 dB		Avg Hold:	100/100	
Ref 10 dB/div Re	f Offset 41.2 dB f 50.80 dBm					Mk	r1 3.098 1 GHz -26.744 dBm
			Ť				
40.8							
30.8				1	n		
20.8							
10.0							
10.0							
0.800							
-9.20							
				1			DL1 -19.00 dBm
-19.2							
-29.2				1		a genelation of the second	
an a							
-39.2							
Start 20 MHz			A				Stop 3.500 GHz
#Res BW 1.0 I	MHz	#VB	W 3.0 MHz*			Sweep 4	.800 ms (8001 pts)
MSG					STATUS		

POILT, NR, DAHUTIZS, 1930 - 1995 MITZ, 30 MITZ, QESK, MIQ CHAIHEI, 1902.5 MITZ								
Frequency	Measured	Max Value	Limit					
Range	Freq (MHz)	(dBm)	< (dBm)	Result				
3.5 GHz - 13 GHz	4003.5	-40.57	-19	Pass				

	DE	FRO DC			CENCERTIT	ALTO			02:55:4	1 AM Cop 30, 2022
	NF.	1 30 sz DC		PNO: Fast ↔ FGain:Low	Trig: Free F #Atten: 20	Run dB	Avg Type: Avg Hold: 1	RMS 100/100	03.33.4 Ti	RACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN
10 dB/div	Ref Off: Ref 30	set 24.9 dB 1.90 dBm						м	kr1 4.003 -40	500 GHz 571 dBm
20.9										
10.9										
1.900										
-9.10										
-19.1										DL1 -19.00 dBm
-29.1	1									
-49.1	\sim	~~~	<u>``</u>	$\sim\sim$	~~~~					
-59.1										
Stort 2.59									Stor	
Start 3.50 #Dec BIM	1 0 MH:	,		#VB	W 3 0 MH7*			Sween	Stop 16 00 ms	(2000 GHZ

element

Freque	ncy	Measured	Max Value	Limit	
Rang	e	Freq (MHz)	(dBm)	< (dBm)	Result
13 GHz - 2	2 GHz	21558.55	-34.17	-19	Pass
Keysight Spectrum Analyzer - Element Mater	ials Technology				
X RL RF 50Ω DC	55	ENSE:INT	ALIGN AUTO LIGHT		04:07:28 AM Sep 30, 2022
	PNO: Fast ↔	Trig: Free Run #Atten: 6 dB	Avg Type: Avg Hold:	RMS 100/100	TYPE A WWWW DET A NNNN
	in Guilleon			Mkr1	21 558 55 GHz
Ref Offset 44.5 dB				WIKI I	-34,165 dBm
		•		1	
30.5					
20.5					
10.5					
0.500					
-9.50					
-19.5					DL1 -19.00 dBm
-29.5					1
		- Internet			
-39.5	and the second se				
-49.5					
Start 13.000 GHz					Stop 22.000 GHz
#Res BW 1.0 MHz	#VBV	N 3.0 MHz*		Sweep 16	.00 ms (20001 pts

Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, 16QAM, Mid Channel, 1962.5 MHz							
	Frequency		Max Value	Limit			
	Range		(dBm)	< (dBm)	Result		
	9 kHz - 150 kHz	0.07	-59.64	-49	Pass		

RI RE 50.0 DC	SE	NSE-INT /	LIGN AUTO LIGHT		03-25-45 AM Sep 30, 202
	PNO: Wide ↔ IFGain:Low	Trig: Free Run Atten: 6 dB	Avg Type: RM Avg Hold: 100	AS)/100	TRACE 1 2 3 4 5 TYPE A WWWW DET A N N N N
Ref Offset 20.3 dB dB/div Ref 0.00 dBm				Mł	r1 68.044 kH -59.637 dBr
		Ĭ			
.0					DL1 -49.00 d
.0		1			
		L		humm	
.0					
art 9.00 kHz	#\/B\A	3.0 kHz*		Sween 56	Stop 150.00 kH



	Port 1, NR, Band n25, 1	1930 - 1995 MHz, 30 MHz,	16QAM, Mid Char	nnel, 1962.5 MHz	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	150 kHz - 20 MHz	0.15	-63.7	-39	Pass
Keysight Spect	rtrum Analyzer - Element Materials Technology RF 50 Ω DC	SENSE:INT	ALIGN AUTO LIGHT		03:30:14 AM Sep 30, 2022
	PNO: IFGain	Fast →→→ Trig: Free Run :Low #Atten: 10 dB	Avg Type: Avg Hold:	RMS 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N
10 dB/div	Ref Offset 19.4 dB Ref -6.00 dBm			r	Mkr1 155.0 kHz -63.704 dBm
209					
-16.0					
-26.0					
20.0					
-36.0					DL1 -39.00 dBm
-46.0					
-56.0					
-66.0					
-76.0					
-86.0	n de la company de la comp		halasistismini alisteranja ja kasina indu		have been a preserve and the second
-96.0					
Stort 450 k					Stop 20 000 Miles
#Res BW 1	l0 kHz	#VBW 30 kHz*		Sweep 7	9.47 ms (8001 pts)
MSG			STATUS		
	Port 1 NR Band n25 1	1030 - 1005 MHz 30 MHz	160AM Mid Char	nel 1062 5 MU-	,
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	20 MHz - 3.5 GHz	3210.73	-26.97	-19	Pass

L RF 50 Ω DC		SENSE:INT	ALIGN	AUTO LIGHT	03:4	4:59 AM Sep 30, 2
	PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 20 dB		Avg Type: RMS Avg Hold: 100/10	00	TRACE 1 2 3 4 TYPE A WWW DET A N N N
Ref Offset 41.2 dB B/div Ref 50.80 dBm					Mkr1 3 -2	.210 7 G 6.972 dE
		Ĭ				
			46	"		
						DL1 -19.0
			Л			♦ ¹
	taya na katala na panganana katala ka	and a second			a series and the series of the	
t 20 MHz					St	op 3.500 C



I	Frequency	Meas	sured	Max Value	Limit		Result
3.5	GHz - 13 GHz	400	8 73	-40.59	-19		Pass
0.0		100	0.10	10100			1 400
Keysight Spectrum Analyzer - Fler	ment Materials Technology						
LXI RL RF 50 Ω	DC	SENSE:INT	A	LIGN AUTO LIGHT		04:0	0:16 AM Sep 30, 2022
	PNO: F IFGain:	ast ↔→ Trig: Fre Low #Atten: 2	e Run 20 dB	Avg Type: Avg Hold:	RMS 100/100		TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N
Ref Offset 24. 10 dB/div Ref 30.90 d	9 dB IBm				Mł	(r1 4.0) -4	08 725 GHz 10.590 dBm
			Y				
20.0							
20.5							
10.9							
0.900							
-9.10							
-19.1							DL1 -19.00 dBm
-29.1							
▲ 1							
-39.1							
40.4							
-49.1							
-59.1							
Start 3.500 GHz #Res BW 1.0 MHz		#VBW 3.0 MH	z*		Sweep	Sto 16.00 n	p 13.000 GHz ns (20001 pts)
MSG				STATUS			

Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, 16QAM, Mid Channel, 1962.5 MHz								
Frequency	Measured	Max Value	Limit					
Range	Freq (MHz)	(dBm)	< (dBm)	Result				
13 GHz - 22 GHz	21540.55	-34.02	-19	Pass				

Keysight Spe	ctrum Analyzer - Element Materia	ls Technology				
X RL	RF 50 Ω DC	PNO: Fast ↔ IFGain:Low	. Trig: Free Run #Atten: 6 dB	ALIGN AUTO LIGHT Avg Type: R Avg Hold: 10	MS 0/100	04:09:18 AM Sep 30, 2022 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N
10 dB/div Loa	Ref Offset 44.5 dB Ref 40.50 dBm				Mkr1	21.540 55 GHz -34.022 dBm
30.5						
20.5						
10.5						
).500						
-9.50						
19.5						DL1 -19.00 dBm
-29.5			and the second			
-49.5						
Stort 12-0						Stan 22 000 Olla
start 13.0 #Res BW	1.0 MHz	#VB	W 3.0 MHz*		Sweep 16	.00 ms (20001 pts)
SG	and the state of the			STATUS		



	Frequency	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
9	kHz - 150 kHz	0.07	-59.27	-49	Pass
<u> </u>	•				· · ·
Keysight Spectrum Analyzer - El	lement Materials Technology				
LXI RL RF 50 9	Ω DC	SENSE:INT	ALIGN AUTO LIGHT	RMS	03:22:53 AM Sep 30, 2022
	PNO: Wi IFGain:L	de ↔→ Trig: Free Run ow Atten: 6 dB	Avg Hold:	100/100	TYPE A WWWW DET A N N N N
Ref Offset 2 10 dB/div Ref 0.00 d	0.3 dB IBm			м	kr1 68.044 kHz -59.274 dBm
		Ť			
-10.0					
-20.0					
-30.0					
-40.0					
40.0					
-50.0					DL1 -49.00 dBm
		≜ ¹			
-60.0		Å			
70.0					
	~				
-80.0	- man	~~~~			
			mmm	human	~~~
-90.0					
Start 9.00 kHz	,	#\/D\W_2.0.kU=t		O ursen 6	Stop 150.00 kHz
WRES BW 1.0 KHZ		#VBW 3.0 KH2*	STATI	Sweep 5	0.00 ms (8001 pts)
mou			STATUS		

FOR 1, NR, Dahu 125, 1950 - 1995 MHZ, 50 MHZ, 04 QAM, Mid Chamler, 1902.5 MHZ									
Frequency	Frequency Measured Max Value Limit								
Range	Freq (MHz)	(dBm)	< (dBm)	Result					
150 kHz - 20 MHz	0.15	-63.85	-39	Pass					

RL	RF	50 Ω DC			SENSE:INT	ALIGN	AUTO LIGHT		03:31:52	2 AM Sep 30, 20
				PNO: Fast ↔→ IFGain:Low	Trig: Free Ru #Atten: 10 dB	n	Avg Type: I Avg Hold: 1	RMS 00/100	TF	ACE 1234 TYPE A WWW DET A NNN
dB/div	Ref Of Ref -6	fset 19.4 dB 6 .00 dBm							Mkr1 1 -63.	50.0 kH 853 dB
-										
0										
										DL1 -39.00
1										
, k										
A NIME	vne invineria and	hal-ration-constanting to a	allan di Antonia di Albaharia an	A Mile the stress statutes are seen	s	dam Milats Julia Accidence	there defines a finite farmer see			alan tasa tasa kasalah ata
							na in an	and hand with the population from the		and the second
rt 150	kHz				A 20 KH=*			0	Stop 2	20.000 M



	Frequency		Measured	Ма	ax Value	Limit	F	Docult
20) MHz - 3.5 GHz		3180.71		-27.33	-19		Pass
· · · ·			•					
Keysight Spectrum Analyzer - E	lement Materials Technolo	gy						
XX RL RF 50	Ω DC	PNO: Fast ↔	Trig: Free Run	ALIGN	AUTO LIGHT Avg Type: Avg Hold:	RMS 100/100	03:46	43 AM Sep 30, 2022 TRACE 1 2 3 4 5 6 TYPE A WWWWW
Ref Offset 4	II.2 dB	-Gain:Low	#Atten: 20 dB			IV	1kr1 3.	180 7 GHz
Log	aBm		•				-21	
40.8								
30.8				m -	-			
20.8								
10.0								
10.0								
0.800								
-9.20								
-19.2								DL1 -19.00 dBm
					Ц			
-29.2	the second s			-				
-39.2								
Start 20 MHz		<i>"</i> ,					Sto	p 3.500 GHz
#Res BW 1.0 MHz		#VBV	V 3.0 MHz*			Sweep	4.800 n	ns (8001 pts)
MSG					STATUS	an an an Ann an Ann An Ann an Ann		
P	ort 1, NR, Band n2	25, 1930 - 199	95 MHz, 30 MHz,	64QAI	M, Mid Char	nnel, 1962.5 M	Hz	
	Frequency		Measured	Ма	ax Value	Limit		

Port 1, NR, Band n25, 1930 - 199	Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, 64QAM, Mid Channel, 1962.5 MHz								
Frequency	Measured	Max Value	Limit						
Range	Freq (MHz)	(dBm)	< (dBm)	Result					
3.5 GHz - 13 GHz	4028.68	-40.66	-19	Pass					

RL	RE 50 Q	DC		SENSE:INT	ALIGN AUTO LIGHT	and the second second	04:02:53	AM Sep 30, 20
			PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 20 dB	Avg Type: Avg Hold:	RMS 100/100	TR T	ACE 1 2 3 4 YPE A WWWA DET A N N N
dB/div R g	ef Offset 24 ef 30.90 (.9 dB 1 Bm			1	M	kr1 4.028 -40.	675 GH 659 dB
.9								
9								
								DL1 -19.00
↓ 1	-							
rt 3.500 C	Hz						Stop 1	3.000 G
es BW 1 (MHz		#VF	SW 3.0 MHz*		Sween	16.00 ms	20001 n

element

Freque	ency	Measured	Max Value	Limit	
Rang	ge	Freq (MHz)	(dBm)	< (dBm)	Result
13 GHz - 2	22 GHz	21537.4	-34.3	-19	Pass
Keysight Spectrum Analyzer - Element Mate	erials Technology				
LX RL RF 50 Ω DC		SENSE:INT	ALIGN AUTO LIGHT	PMS	04:11:17 AM Sep 30, 2022
	PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 6 dB	Avg Hold:	100/100	TYPE A WWWWW DET A N N N N
Ref Offset 44.5 dB				Mkr1	21.537 40 GHz
10 dB/div Ref 40.50 dBm					-34.303 UBN
30.5					
20.5					
10.5					
10.0					
0 500					
0.000					
-9.50					
0.00					
-19.5					DL1 -19.00 dBm
-29.5					
-39.5					and the state of the
-49.5					
Start 13.000 GHz				O urson - 10	Stop 22.000 GHz
#Res DW 1.0 MHZ	#V	5W 3.0 MINZ"		Sweep 16	.00 ms (20001 pts

Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, 256QAM, Mid Channel, 1962.5 MHz								
	Frequency	Measured	Max Value	Limit				
	Range	Freq (MHz)	(dBm)	< (dBm)	Result			
	9 kHz - 150 kHz	0.07	-59.4	-49	Pass			

Keysight Spe	ctrum Analyzer - Element Materials T	echnology				
KL	RF 50 Ω DC	PNO: Wide IFGain:Low	Trig: Free Run Atten: 6 dB	ALIGN AUTO LIGHT Avg Type: F Avg Hold: 10	MS 00/100	03:26:59 AM Sep 30, 2 TRACE 1 2 3 4 TYPE A WWW DET A N N
10 dB/div	Ref Offset 20.3 dB Ref 0.00 dBm					Mkr1 68.044 k -59.403 dE
			Ĭ			
10.0						
20.0						
-30.0						
40.0						
50.0						DL1 -49.00
en n			∳ ¹			
~~~			A			
.70.0	man and a second					
-80.0			Hann	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	A	
-90.0						
Start 9.00	kHz					Stop 150.00 k
#Res BW	1.0 kHz	#VB	W 3.0 kHz*		Sweep	56.00 ms (8001 p
ISG				STATUS		



			- 1000 100				1 4000 5 1		
		Port 1, NR, Band n	25, 1930 - 199	5 MHz, 30 MF	Iz, 2560	AM, Mid Cha	Innel, 1962.5 M	Hz	
		Frequency		Measure	d	Max value		Desult	
	1	Kange		Freq (IVIE	z)	(asm)	< (asm)	Result	1
		150 KHZ - 20 MHZ		0.15		-63.27	-39	Pass	
	Keysight Spectrum Anal	lyzer - Element Materials Technol	ogy						×
LXI	RL   RF	50 Ω DC	SI SI	ENSE:INT	AL	Ava Type:	RMS	03:33:30 AM Sep 30, . TRACE 1 2 3 4	2022 5.6
			PNO: Fast	Trig: Free Ru	n	Avg Hold:	100/100		WWW NNNN
			IFGain:Low	#Atten: 10 dB					
10	RefOf dB/div <b>Ref-f</b>	fset 19.4 dB 6.00 dBm						Mkr1 150.0 k -63.273 dE	Hz Bm
Lo	g		T T	Y					
-16	.0								
-26	.0								
-36	.0							DL1 -39.00	l dBm
-46	.0								
-56	.0								
	<b>)</b>								
-66	.0								
-76	.0								
-86	.0 This way way and a set		-	when we and me	(nyr <mark>yrhyddylffo</mark> d	والمدام والمحالي المراجع المحالية	المراجع وأحفاظ والمحافظ والمحاف	and marting how we are specially services	internal and a second s
-96	0								
Sta	art 150 kHz							Stop 20.000 N	IHz
#R	es BW 10 kHz		#VBV	V 30 kHz*			Sweep	79.47 ms (8001 p	ots)
MSG						STATUS			
		Port 1, NR, Band n	25, <del>1930 - 199</del>	5 MHz, 30 MH	Hz, 2560	QAM, Mid Cha	nnel, 1962.5 M	Hz	
		Frequency		Measure	d	Max Value	Limit		
		Range		Freq (MH	z)	(dBm)	< (dBm)	Result	1
		20 MHz - 3.5 GHz		3117.64		-27.28	-19	Pass	

Frequency         Measured         Max Value         Limit           Range         Freq (MHz)         (dBm)         < (dBm)	Port 1, NR, Band n25, 1930 - 19	95 MHz, 30 MHz, 2	56QAM, Mid Cha	nnel, 1962.5 MHz	<u>_</u>
Range         Freq (MHz)         (dBm)         < (dBm)         Result           20 MHz - 3.5 GHz         3117.64         -27.28         -19         Pass	Frequency	Measured	Max Value	Limit	
20 MHz - 3.5 GHz 3117.64 -27.28 -19 Pass	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	20 MHz - 3.5 GHz	3117.64	-27.28	-19	Pass

Keysight S	pectrum Analyzer - Element Mater	ials Technology	INCE-THT			02:48:31 AM Son 20, 2022
	N 30 32 DC	PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 20 dB	Avg Type: Avg Hold: 1	RMS 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N
10 dB/div	Ref Offset 41.2 dB Ref 50.80 dBm					Mkr1 3.117 6 GHz -27.277 dBm
209			Ĭ			
40.8						
30.8				4 <u>n</u>		
20.8						
10.8						
0.800						
0.000						
-9.20						
-19.2						DL1 -19.00 dBm
						<b>↓</b> 1
-29.2	and the state of the	n jaar faan yn de staan yn de gestre de anst bel	and the second	All and a second se	· ····	
-39.2						
Start 20 #Res BW	MHz / 1.0 MHz	#VBV	/ 3.0 MHz*		Swee	Stop 3.500 GHz p 4.800 ms (8001 pts)
MSG				STATUS		

### element 22206030 XM# 2022 02 07 0



Port 1, NR, Band n25, 1930 - 1995 MHz, 30 MHz, 256QAM, Mid Channel, 1962.5 MHz							
Frequency	Measured	Max Value	Limit				
Range	Freq (MHz)	(dBm)	< (dBm)	Result			
13 GHz - 22 GHz	21945.1	-34.11	-19	Pass			

🛄 Keysight Sp	ectrum Analyzer - Element Mate	rials Technology						
LXIRL	RF   50 Ω DC	PNO: Fast IFGain:Lov	SENSE:INT Trig: Free #Atten: 6	eRun dB	ALIGN AUTO LIGHT Avg Type: F Avg Hold: 1	MS 00/100	04:12:50 TF	AM Sep 30, 2022 ACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN
10 dB/div	Ref Offset 44.5 dB Ref 40.50 dBm					N	lkr1 21.94 -34.	5 10 GHz 113 dBm
30.5								
20.5								
10.5								
0.500								
-9.50								DL1 -19.00 dBm
-19.5								1
-39.5								Y
-49.5								
Start 13.0 #Res B <u>W</u>	000 GHz 1.0 MHz		#VBW 3.0 <u>MH</u>	z*		Swee	Stop 2 5 16.00 ms	22.000 GHz (20001 p <u>ts)</u>
MSG					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
Block - DC	Fairview Microwave	SD3379	AMM	2022-09-09	2023-09-09
Block - DC	Fairview Microwave	SD3239	ANC	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

#### **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) and RSS Gen 6.13, 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), RSS-133 6.5 (ii), FCC 27.53 (h) (1), RSS-139 5.6, the power of any emission outside of the Authorized operating frequency range cannot exceed -13sBm for a 1 MHz measurement bandwidth. The limit is adjusted To -19dBm [-13 dBm -10log (4)] per FCC KDB 662911D01v02r01 because the BTS may operate as a 4 port MIMO.

RF conducted emissions testing was performed on one port. The AHFIB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in original certification report) and port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

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/1kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.



			TbtTx 2022.06.03.0	XMI: 2022.02.07.0
EUT: AHFIB		Work Order:	NOKI0049	
Serial Number: K9181401111		Date:	30-Sep-22	
Customer: Nokia of America Corporation		Temperature:	21.9 °C	
Attendees: John Rattanavong		Humidity:	48% RH	
Project: None		Barometric Pres.:	1012 mbar	
Tested by: Marty Martin Power: 54 VDC		Job Site:	TX07	
TEST SPECIFICATIONS Test Meth	od			
FCC 27:2022 and FCC Part 24:2022 ANSI C63.	26:2015			
RSS-133 issue 6: 2013+A12018 RSS-133 i	sue 6: 2013+A12018			
RSS-139 Issue 4: 2022 RSS-139 I	sue 4: 2022			
COMMENTS				
All measurement path losses were accounted for in the reference level offest including any attenuators, filters and DC blocks. Multi carrier test case 1 and 2: The carriers are operated at maximum power (~200/AWS carrier and 40WIPCS carrier) with a total port power of 80 watts. Multi carrier test case 3 and 4: The carrier ser operated at maximum power (~200/AWS carrier and 40WIPCS carrier) with a total port power of 80 watts. Multi carrier test case 3 and 5: The carrier ser operated at maximum power (~200/AWS carrier and 40WIPCS carrier) with a total port power of 80 watts. Multi carrier test case 5: The carriers are operated to the carrier is total port power of 80 watts.	PCS carrier and 40 at maximum power	//AWS carrier) with (~13.3W/AWS carrie	a total port p r and ~13.3V	ower of 80 //PCS
None				
Configuration # 1, 2, 3, 4 Mostly Martin				
Freu Ran	ncy Measure ae Freq (MH	d Max Value z) (dBm)	<ul> <li>Limit</li> <li>&lt; (dBm)</li> </ul>	Result
MultiCarrier Test Case 1, PCB Band 20W 30 MHz BW (1945 0 and 1975 0 MHz) AWS Band 40W 5 MHz) 0 (1955 0 MHz) 0 (1975 0 MHz) 0 (	50 kHz 0.07	-56.18	-49	Pass
MultiCarrier Test Case 1, PCS Band 20W 30 MHz BW (1945.0 and 1975.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 150 kHz -	20 MHz 8.71	-57.46	-39	Pass
MultiCarrier Test Case 1, PCS Band 20W 30 MHz BW (1945.0 and 1975.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 20 MHz - 20 MHz -	3.5 GHz 3205.76	-27.1	-19	Pass
MultiCarrier Test Case 1, PCS Band 20W 30 MHz BW (1945.0 and 1975.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 3.5 GHz -	13 GHz 4031.0	-40.63	-19	Pass
MultiCarrier Test Case 1, PCS Band 20W 30 MHz BW (1945.0 and 1975.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 13 GHz - 13 GHz -	22 GHz 21555.8	5 -34.17	-19	Pass
MultiCarrier Test Case 2, PCS Band 20W 30 MHz BW (1950.0 and 1980.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 9 kHz - 1	50 kHz 0.07	-51.67	-49	Pass
MultiCarrier Test Case 2, PCS Band 20W 30 MHz BW (1950.0 and 1980.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 150 kHz - 150 kHz -	20 MHz 8.7	-57.77	-39	Pass
MultiCarrier Test Case 2, PCS Band 200W 30 MHz BW (1950.0 and 1980.0 MHz). AWS Band 40W 5 MHz BW (2155.0 MHz) 20 MHz - 2	3.5 GHz 3200	-27.72	-19	Pass
MultiCarrier Test Case 2, PCS Band 20W 30 MHz BW (1950.0 and 1980.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 3.5 GHz -	13 GHz 4000.18	-40.7	-19	Pass
MultiCarrier Test Case 2, PCS Band 20W 30 MHz BW (1950.0 and 1980.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz) 13 GHz -	22 GHz 21546.4	-34.36	-19	Pass
MultiCarrier Test Case 3, PCS Band 40W 5 MHz BW (1962.5 MHz), AWS Band 20W 30 MHz BW (2125.0 and 2155.0 MHz) 9 kHz - 1	50 kHz 0.07	-51.51	-49	Pass
MultiCarrier Lest Case 3, PCS Band 40W 5 MHz BW (1962,5 MHz), AWS Band 20W 30 MHz BW (2125,0 mHz) 150 kHz - 150 kHz	20 MHz 8.7	-56.89	-39	Pass
Multicarrier rest Case 3, PCS Band 40W 5 MHz BW (1902,5 MHz), AWS Band 20W 30 MHz BW (2125,0 MHz) 20 MHz - 20 M	3.5 GHZ 3142.1	-27.11	-19	Pass
MultiCarrier 1est Case 3, PCS Band 40W 5 MHZ BW (1902;5 MHZ), AWS Band 20W 30 MHZ BW (2125,0 and 2155,0 MHZ) 3,5 GHZ -	13 GHZ 4011.1	-40.5	-19	Pass
Multicarrier fest Case 3, PCS Band 40W 5 MHz BW (1902,5 MHz), AWS Band 20W 30 MHz BW (2125,0 MHz) 13 GHz-	22 GHZ 21624.	-33.81	-19	Pass
MultiCarrier 1est Case 4, PCS Band 40W 5 MHZ BW (1902;5 MHZ), AWS Band 20W 30 MHZ BW (2155,0 and 2185 MHZ) 9 KHZ - 1	50 KHZ 0.07	-54.7	-49	Pass
MultiCarrier Test Case 4, PCS Band 40W 5 MHZ BW (1902;5 MHZ), AWS Band 20W 30 MHZ BW (2150;0 MHZ) 100 MHZ) 100 MHZ -	20 MITZ 0.71	-00.42	-39	Pass
Multicenter less case 4, Fost bailer 40W 5 Minz biv (1902,5 Minz), AWS baild 20W 30 Minz biv (2153,6 Minz) 22 Minz biv (2153,6 Minz) 22 Minz biv (2153,6 Minz) 20 Minz biv (21	10 OHZ 0220.9	-27.49	-19	Pass
Multirucation         test Gase 4         COS Datin 4 MVV 3 MITLE DVV (1992.3 MITL), AWS Datil 2 DVV 3 MITL2 DVV (2153.0 atil 2 105 MITL)         3.3 GHZ-           Multirucation         test Gase 4         COS Band 40 W 5 MHZ BVV (1992.5 MHZ), AWS Datil 2 DVV 3 MHZ BVV (2155.0 and 1918 MHZ)         13 GHZ-	13 GF12 3993.3	-40.72	-19	r dSS Dace
manucalitati tasi dase 4, ruo bala 4 yuvi 3 mitta biyi (1902.3 mitta), Awo bala 2 uvi 3 mitta biyi (2103.0 mitta) 13 GHZ- Multifrazirar Tasi Canas B, Dres Band 4 3 Wis Kiluba DW (402.5 Mitta), Awo bala 2 0 Wis Multa DW (414.5 C)417.5 and 2107.5 Mitta) 0.1917.	CLUNC 21/34.8	-34.00 E4 EE	-19	Pass
Multicating residence of the starts and star	20 MHz 8 7	-04.00	-49	r dSS Dace
Multicenter rest Gase 5, rest Band 13, WIS MHZ DW (1992, x) 1937, 3 dHC 1992, 3 WHZ, JW WIS MHZ DW (2112, 3, 2117, 3 dHC 1917, 3 HHZ) 100 HHZ - MultiCenter Test Gase 5, DPS Band 13, WIS MHZ DW (1922, 5 1027, 5 and 100) 5 MHZ DW (2112, 5 2117, 5 and 2107, 5 MHZ) 20 MHZ - 100 HHZ - 100	25 GHz 3108 2	-39.83	-39	Daee
Multiclement rest Gase 5 (CC Bank 10 SW 5 MHz DW (1922.5) 1937.5 410 (1922.5) WHZ; XW 7 SWH2 DW (2112.5), 2117.5 and 9102.75 XW 9107.5 20 WHZ - 20	13 GHz 4028 2	-27.2	-19	Pass
MultiCarrier Test Case 5, PCS Band 13,3W 5 MHz BW (1925,5 1937,5 and 1992,5 MHz), WNS Band 13,3W 5 MHz BW (2112,5,2 H17,5 and 2197,5 MHz) 13 GHz -	22 GHz 21598.1	5 -34.33	-19	Pass





ort 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 1, PCS Band 20W 30 MHz BW (1945.0 and 1975.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz)									
	Frequency	Measured	Max Value	Limit					
	Range	Freq (MHz)	(dBm)	< (dBm)	Result				
	150 kHz - 20 MHz	8.71	-57.46	-39	Pass				

Keysight Spectrum Analyzer - Element Materia	als Technology				- 6
CM RL   RF   50 Ω DC	PNO: Fast ++- IFGain:Low	Trig: Free Run #Atten: 10 dB	ALIGN OFF Avg Type: RM Avg Hold: 100/	09:26:29 S TRJ 100 T	AM Sep 30, 2022 ACE 1 2 3 4 5 6 YPE A WWWWW DET A NNNNN
Ref Offset 19.4 dB 10 dB/div Ref -6.00 dBm				Mkr1 8.70 -57.4	)5 4 MHz 456 dBm
-16.0					
-26.0					
-36.0					DL1 -39.00 dBm
-46.0		<u>_</u> 1			
-66.0					
-76.0					
-86.0	historianistangen, manistradistangen ng	445.9 ⁰	anland haya'n ny gan hainda lla an gan hainain ha	hannairid prychorydd yn yn ddiaid y ryger hyddorog	an siya ta siya ta siya siya siya siya siya siya siya siy
-96.0					
Start 150 kHz #Res BW 10 kHz	#VBN	V 30 kHz*		Stop 2 Sweep 79.47 ms	0.000 MHz (8001 pts)
MSG			STATUS		



Frequency		Measured	Max Value	Limit	
Range		Freq (MHz)	(dBm)	< (dBm)	Result
20 MHz - 3.5 GI	Hz	3205.76	-27.1	-19	Pass
Kowight Spectrum Applager Floment Materials To	shaalaan				
XI RL RF 50 Ω DC	SE	ENSE:INT	ALIGN OFF		09:34:17 AM Sep 30, 202
			Avg Type:	RMS	TRACE 1 2 3 4 5
	PNO: Fast	Trig: Free Run	Avg Hold:	100/100	DET A NNNN
	IFGain:Low	#Atten: 20 db			4.0.005.0.00
Ref Offset 41.2 dB				MK	TI 3.205 8 GH
10 dB/div Ref 50.80 dBm					-27.100 dBn
		The second se			
40.8			1		
30.8					
20.8					
10.8					
0 800					
0.000					
-5.20					
					DL1 -19.00 dBr
-19.2					.1
-29.2			- Contraction of the second		And the second
-39.2					
Start 20 MHz					Stop 3.500 GH

ort 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 1, PCS Band 20W 30 MHz BW (1945.0 and 1975.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz)									
	Frequency	Measured	Max Value	Limit					
Range		Freq (MHz)	(dBm)	< (dBm)	Result				
	3.5 GHz - 13 GHz	4031.05	-40.63	-19	Pass				

Keysight Sp	ectrum Analyzer - Element I	Materials Technology							- 6 <b>-</b>
LXVI RL	RF   50 Ω DC	PNC	): Fast ↔	ENSE:INT	Run	IGN OFF Avg Type: I Avg Hold: 1	RMS 00/100	09:38:36 TR T	AM Sep 30, 2022 ACE 1 2 3 4 5 6 YPE A WWWWW
		IFGa	in:Low	#Atten: 20	dB				DET A NNNNN
10 dB/div	Ref Offset 24.9 dE Ref 30.90 dBm	3					Mł	r1 4.031 -40.	050 GHz 634 dBm
209									
20.9									
10.9									
0.900									
-9.10									
-19.1									DL1 -19.00 dBm
-29.1	<b>1</b>								
-39.1				~~~					
-49.1									
-59.1									
Start 3.50 #Res BW	0 GHz 1.0 MHz		#VBV	V 3.0 MHz*			Sweep	Stop 1 16.00 ms	3.000 GHz 20001 pts)
MSG						STATUS			



Range         Freq (MHz)         (dBm)         < (dBm)	Frequency		Measured	Max Value	Limit	
13 GHz - 22 GHz       21555.85       -34.17       -19       Pass         Keysight Spectrum Analyzer - Element Materials Technology       ALIGN OFF       09:42:22 AMS op 0, 02:22         W RL       RE       50 Ω DC       SENSEINT       Avg Type: RMS         PNO: Fast	Range		Freq (MHz)	(dBm)	< (dBm)	Result
Keysight Spectrum Analyzer - Element Materials Technology	13 GHz - 22 Gł	Hz	21555.85	-34.17	-19	Pass
Keysight Spectrum Analyzer - Element Materials Technology         ✓         SENSE:INT         ▲ ALIGN OFF         09:42:22 AM Sep 30, 202           PNO: Fast IFGain:Low         →         Trig: Free Run #Atten: 6 dB         Avg1ybeid: 100/100         Trace Trace         Trace Avg1ybeid: 100/100         Trace Trace         Trace Avg1ybeid: 100/100         Trace Trace         Avg1ybeid: 100/100         Trace         Avg1ybeid: 100/100         Avg1ybeid: 100/100 <th>·</th> <th></th> <th></th> <th></th> <th></th> <th></th>	·					
Response       Ref       D C       SENSE:INT       ALIGN OFF       099-222-34 Seg 30, 202         PN0: Fast	······					
PNO: Fast IFGain:Low       Trig: Free Run #Atten: 6 dB       Avg Type: RMS AvgIhold: 100/100       Trace Tree Contraction       234.5         10 dB/div       Ref 40.50 dBm	Reversignt Spectrum Analyzer - Element Materials Te	cnnology	ENCE-INT	ALIGN OFF		00:42:22 AM Sep 20, 2022
PRO: Fast IF Gain: Low         Trig: Free Run #Atten: 6 dB         Avg Hold: 100/100         Tree Run Mkr1 21.555 85 GHz -34.173 dBm           0 dB/div         Ref 0ffset 44.5 dB         Mkr1 21.555 85 GHz -34.173 dBm         Image: State of the state	10 50 at 50			Avg Type:	RMS	TRACE 1 2 3 4 5
IFGain:Low         #Atten: 6 dB         Mkr1 21.555 85 GH; -34.173 dBn           0 dB/div         Ref 40.50 dBm         -34.173 dBn           30.6         -34.173 dBn         -34.173 dBn           20.6         -34.173 dBn         -34.173 dBn           30.6		PNO: Fast 🔸	Trig: Free Run	Avg Hold: 1	00/100	
Ref Offset 44.5 dB         Mkr1 21.555 85 GHz           30.5		IFGain:Low	#Atten: 6 dB			
10 dB/div       Ref 40.50 dBm      34.173 dBm         30 5	Ref Offset 44.5 dB				Mkr1	21.555 85 GHz
10.6	10 dB/div Ref 40.50 dBm					-34.173 dBm
30.6       Image: state st			Y			
30.5						
20.5	30.5					
205						
10.50	20.5					
10.5						
0 500 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9	10.5					
0.500						
1950 	0.500					
9.50	0.300					
9.50 -19.5 -29.5 -39.5 -49.5						
.19.5	-9.50					
-19.5 -29.5 -49.5						Di 1 -19 00 dBr
-29.5 -39.5 -49.5	-19.5					
-29.5						
39.5	-29.5					<b>_</b> 1
39.5						A CONTRACTOR OF A CONTRACTOR
-49.5	-39.5					
-49.5						
	-49.5					
Start 13.000 GHz Stop 22.000 GHz			A			

 Port 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 2, PCS Band 20W 30 MHz BW (1950.0 and 1980.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz)

 Frequency
 Measured
 Max Value
 Limit

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

 9 kHz - 150 kHz
 0.07
 -51.67
 -49
 Pass



Report No. NOKI0049.0







Keysight	Spectrum Analyzer - I	Element Materials Te	chnology						
LXI RL	RF 50	Ω DC		SENSE:INT	<u>^</u> /	ALIGN OFF		09:51:2	0 AM Sep 30, 2022
			PNO: Fast ++ IFGain:Low	. Trig: Free #Atten: 20	Run dB	Avg Type: Avg Hold:	RMS 100/100	TI	RACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 4 Ref 50.80	11.2 dB 0 dBm						Mkr1 3.2 -27	00 0 GHz 721 dBm
40.8						1			
30.8									
					<b>(</b> Î)				
20.8									
10.8									
0.800									
0.20									
-9.20									
-19.2									DL1 -19.00 dBm
-29.2						$\wedge$		فوفية والمتلاحين والمهيدومة	
-39.2									
Start 20	) MHz							Stop	3.500 GHz
#Res B	W 1.0 MHz		#VB	W 3.0 MHz	*		Swe	ep 4.800 m	s (8001 pts)
MSG						STATUS			





ort 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 2, PCS Band 20W 30 MHz BW (1950.0 and 1980.0 MHz), AWS Band 40W 5 MHz BW (2155.0 MHz)									
	Measured	Max Value	Limit						
Range		Freq (MHz)	(dBm)	< (dBm)	Result				
	13 GHz - 22 GHz	21546.4	-34.36	-19	Pass				

Keysigl	ht Spectrum A	nalyzer - Element N	Materials Technolo	gy						- 6 <b>-</b>
LXI RL	RF	50 Ω DC		PNO: Fast ↔→→ FGain:Low	Trig: Free #Atten: 6 d	Run IB	ALIGN OFF Avg Type: I Avg Hold: 1	RMS 00/100	09:57:39 TF	AM Sep 30, 2022 ACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N
10 dB/d Log	Ref liv <b>Ref</b>	Offset 44.5 dE 40.50 dBm	3					M	r1 21.54 -34.	6 40 GHz 361 dBm
30.5										
20.5										
10.5										
0.500										
-9.50										DL1 -19.00 dBm
-19.5										
-39.5										
-49.5										
Start 1	3.000 G	H7							Stop 2	2.000 GHz
#Res E	3W 1.0 N	1Hz		#VB	W 3.0 MHz	ĸ		Sweep	16.00 ms	(20001 pts)
MSG							STATUS			





Port 1, NR, PCS Band and AWS B	ort 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 3, PCS Band 40W 5 MHz BW (1962.5 MHz), AWS Band 20W 30 MHz BW (2125.0 and 2155.0 MHz)									
	Frequency Measured Max Value Limit									
	Range Freq (MHz) (dBm) < (dBm) Result									
150 kHz - 20 MHz 8.7 -56.89 -39 Pass										

Ke	ysight Spectru	um Analyzer - Element I	Materials Technolo	gy						
LXI R	L	RF 50 Ω DC			SENSE:INT	A	LIGN OFF Avg Type: I	RMS	10:11:08 TR	AM Sep 30, 2022 ACE 1 2 3 4 5 6
			li li	NO: Fast ↔→ Gain:Low	Trig: Free I #Atten: 10	Run dB	Avg Hold: 1	00/100		
10 di	3/div	Ref Offset 19.4 dE Ref -6.00 dBm	3						Mkr1 8.7 -56.	02 9 MHz 894 dBm
LOG						(				
-16.0										
-26.0										
-36.0										DL1 -39.00 dBm
-46.0										
-56.0					¹					
-66.0										
-76.0		Alter								
-86.0	Marchant	and a second	and the second sec	Part provide the state of the s	ๆร ^า คาสาร์ระบ _ั นสุ	and a first the mail of the	hanisty of the states of the	un hingelinger and starte	methodarii(vistya)	malajamakikingaindhathi
-96.0										
Star #Re:	t 150 kH s BW 10	lz ) kHz		#VB	W 30 kHz*			Sweep	Stop 2 5 79.47 ms	0.000 MHz (8001 pts)
MSG							STATUS			



	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	20 MHz - 3.5 GHz		3142.13	-27.11	-19	Pass
·						· · · ·
M Kausiaht Casataura Analasa	Flow and Materials Taskes al					
XI RL RE	50 Q DC	bgy	ENSE:INT	ALIGN OFF		10:15:21 AM Sep 30, 202
				Avg Type:	RMS	TRACE 1 2 3 4 5
		PNO: Fast	Trig: Free Run	Avg Hold:	100/100	DET A N N N
		FGain:Low	#Atten: 20 dB			
Ref Offse	t 41.2 dB				MI	(r1 3.142 1 GH
10 dB/div Ref 50.8	t0 dBm					-27.110 dBi
			Ť			
40.8						
30.8						
20.8						
10.8						
n snn						
0.00						
-9.20						
10.0						DL1 -19.00 dt
-19.2						1
-29.2	and the second description of the second	and the second second	and the second secon	A Real Property and the second s	The set of the literation of the set	a a contraction of the second seco
	and the local data in					
-39.2						
Otort 20 Mills			*			Oton 2 500 OL
Start 20 WHZ		#\/B\			Cuucon (	Stop 3.300 GH

Port 1, NR, PCS Band and AWS B	ort 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 3, PCS Band 40W 5 MHz BW (1962.5 MHz), AWS Band 20W 30 MHz BW (2125.0 and 2155.0 MHz)									
	Frequency Measured Max Value Limit									
	Range Freq (MHz) (dBm) < (dBm) Result									
3.5 GHz - 13 GHz 4011.1 -40.5 -19 Pass										

Keysight Spectru	um Analyzer - Element I	Materials Technolo	уу						
(X) RL	RF   50 Ω DC	F	PNO: Fast ↔→ Gain:Low	Trig: Free F #Atten: 20	Run dB	LIGN OFF Avg Type: I Avg Hold: 1	RMS 00/100	10:18:55 TR 1	AM Sep 30, 2022 ACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N
10 dB/div	Ref Offset 24.9 dl Ref 30.90 dBn	3 1					Mł	(r1 4.011 -40.	100 GHz 502 dBm
20.9									
10.9									
0.900									
-9.10									
-19.1									DL1 -19.00 dBm
-29.1									
-49.1	~~~~	~~~~	<u> </u>	~~~					
-59.1									
Start 3.500 ( #Res BW 1.)	GHz 0 MHz		#VB\	N 3.0 MHz*	;		Sweep	Stop 1 16.00 ms	3.000 GHz (20001 pts)
MSG						STATUS			



Frequence	cy	Measured	Max Value	Limit	
Range	-	Freq (MHz)	(dBm)	< (dBm)	Result
13 GHz - 22	GHz	21624.7	-33.81	-19	Pass
M Kanalaka Canadanan Anakaran Flammat Matanial	- Taskaslaw				
Revenue Analyzer - Element Material	is Technology	SENSE-INT	ALIGN OFF		10:23:20 AM Sep 30, 2022
10 18 56 E			Avg Type:	RMS	TRACE 1 2 3 4 5
	PNO: Fast 🔸	Trig: Free Run	Avg Hold: 1	100/100	
	IFGain:Low	#Atten: 6 dB			
Ref Offset 44.5 dB				Mkr1	21.624 70 GHz
10 dB/div Ref 40.50 dBm					-33.812 dBn
Log		Ť			
30.5					
20.5					
10.5					
10.5					
0.500					
-9.50					
-19.5					DL1 -19.00 dBn
-29.5					. 1
20.0					
-39.5	and the second				
-49.5					
Start 13.000 GHz					Stop 22.000 GHz

Port 1, NR, PCS Band and AWS E	and, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 4	, PCS Band 40W 5 MHz B	3W (1962.5 MHz), AW	S Band 20W 30 MHz B	W (2155.0 and 2185 M	Hz)				
	Frequency Measured Max Value Limit									
	Range Freq (MHz) (dBm) < (dBm) Result									
	9 kHz - 150 kHz 0.07 -54.7 -49 Pass									







ort 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 4, PCS Band 40W 5 MHz BW (1962.5 MHz), AWS Band 20W 30 MHz BW (2155.0 and 2185 MHz)											
	Frequency Measured Max Value Limit										
	Range Freq (MHz) (dBm) < (dBm) Result										
i í	20 MHz - 3.5 GHz 3226.95 -27.49 -19 Pass										

Key	sight Spectrum A	Analyzer - Element M	Materials Technolog	уу						
	.   RF	50 Ω DC	F	PNO: Fast +++	Trig: Free F #Atten: 20	Run dB	Avg Typ Avg Hold	e:RMS d: 100/100	10:42:3 Ti	D AM Sep 30, 2022 RACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB	Ref I/div <b>Ref</b>	Offset 41.2 dE 50.80 dBm	3						Mkr1 3.2 -27.	26 9 GHz 486 dBm
40.8										
30.8										
20.8							<u>1</u>			
10.8										
0.800										
-9.20										
-19.2 =										DL1 -19.00 dBm
-29.2 -		والإنسانية والجروان الجرو	amouniajent filinaijan jor	ng pangang pangang na pangang pangang pang	and an	and the second second	, in the second se			
-39.2 -										
Start #Res	20 MHz BW 1.0 N	ЛНz		#VB\	N 3.0 MHz*			Swe	Stop eep 4.800 ms	3.500 GHz s (8001 pts)
MSG		the four string of	AND STOCKED SAN	CONTRACTOR OF	an i China ta Shi ƙ		STATUS	Sector sector sector		





Port 1, NR, PCS Band and AWS E	and, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 4, Po	CS Band 40W 5 MHz B	W (1962.5 MHz), AWS	Band 20W 30 MHz B	W (2155.0 and 2185 MH	iz)			
Frequency Measured Max Value Limit									
Range Freq (MHz) (dBm) < (dBm) Result									
	13 GHz - 22 GHz	21734.95	-34.06	-19	Pass				

Keys	sight Spectrum A	nalyzer - Element N	Materials Technolog	IY						- 6 💌
LA RL	KF	50 <u>12</u> DC	P	NO: Fast ↔ Gain:Low	Trig: Free F #Atten: 6 dl	Run B	Avg Type: F Avg Hold: 10	RM S 00/100	10:52:07 TR T	AM SED 30, 2022 ACE 1 2 3 4 5 6 YPE A WWWWW DET A N N N N N
10 dB	Ref /div Ref	Offset 44.5 dE 40.50 dBm	3					Mk	r1 21.73 -34.	4 95 GHz 060 dBm
30.5 -										
20.5										
10.5 -										
0.500										
-9.50										
-19.5 =										DL1 -19.00 dBm
-29.5 -										<b>↓</b> 1 -
-39.5										
Stort	12 000 0								Otor O	
start #Res	BW 1.0 N	HZ 1HZ		#VBV	V 3.0 MHz*			Sweep	16.00 ms	2.000 GHz (20001 pts)
MSG							STATUS			





 Fort 1, NR, PCS Band and AWS Band, MultiCarrier, 256QAM, Middle Side, MultiCarrier Test Case 5, PCS Band 13.3W 5 MHz BW (1932.5, 1937.5 and 1992.5 MHz), AWS Band 13.3W 5 MHz BW (2112.5, 2117.5 and 2197.5 MHz)

 Frequency
 Measured
 Max Value
 Limit

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

 150 kHz - 20 MHz
 8.7
 -59.83
 -39
 Pass

🔤 Key	sight Spectrum Analyzer - Element	Materials Technolo	gy						- 6 <b>- X</b>
CXI RL	RF   50 Ω D(	-        	PNO: Fast +++	Trig: Free F #Atten: 10	Run dB	Avg Type: F Avg Hold: 1	RMS 00/100	11:05:47 TR 1	AM Sep 30, 2022 ACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N
10 dB	Ref Offset 19.4 di Idiv Ref -6.00 dBm	3					l	Mkr1 8.70 -59.	02 9 MHz 829 dBm
-16.0									
-26.0									
-36.0 -									DL1 -39.00 dBm
-46.0 -									
-56.0				1					
-66.0									
-76.0	Washington water and the second s								
-86.0			Geffend af sectory, Any Carpoon	harril a ^I lle ang Nang Lang Lang L	nan kan fransieraal bester	hanggi shipagi kalipata	analying'i kadopi sebah	المالوي ويأو المالية المراجع المدارية والمراجع الم	etryka ywraegor a spatiat addyr
-96.0									
Start #Res	: 150 kHz BW 10 kHz		#VBI	W 30 kHz*			Sweep	Stop 2 79.47 ms	0.000 MHz (8001 pts)
MSG			Contraction of the			STATUS		an a	





 Port 1, NR, PCS Band and AWS Band, MultiCarrier, 2560AM, Middle Side, MultiCarrier Test Case 5, PCS Band 13.3W 5 MHz BW (1932.5, 1937.5 and 1992.5 MHz), AWS Band 13.3W 5 MHz BW (2112.5, 2117.5 and 2197.5 MHz)

 MHz)
 Frequency
 Measured
 Max Value
 Limit

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

 3.5 GHz - 13 GHz
 4028.2
 -40.69
 -19
 Pass

Keysight Spe	ctrum Analyzer - Element N	Materials Technolo	gy						- 6 💌
IX RL RF 50 Ω DC			5	SENSE:INT	ALIGN	AVG TVDE:	RMS	11:13:32 TE	AM Sep 30, 2022
		F	PNO: Fast ↔→ Gain:Low	Trig: Free F #Atten: 20	Run dB	Avg Hold: 1	00/100	1	
10 dB/div	Ref Offset 24.9 dE Ref 30.90 dBm	3 I					Mł	(r1 4.028 -40.	200 GHz 693 dBm
209									
20.9									
10.9									
0.900									
-9.10									
-19.1									DL1 -19.00 dBm
-29.1									
20.1	1								
-39.1		~~~~		~_~~					
-49.1									
-59.1									
Start 3.50	0 GHz							Stop 1	3.000 GHz
#Res BW	1.0 MHz		#VB	N 3.0 MHz*	*		Sweep	16.00 ms	(20001 pts)
MSG		WIND CONTRACT	0.00000000000			STATUS			



Frequency Range		Measured Freg (MHz)	Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GH	lz	21598.15	-34.33	-19	Pass
		·		·	·
Keysight Spectrum Analyzer - Element Materials Teo	hnology				
XIRL RF 50Ω DC		SENSE:INT	ALIGN AUTO LIGHT		11:17:13 AM Sep 30, 2022
	PNO: Fast ↔ IFGain:Low	. Trig: Free Run #Atten: 6 dB	Avg Type: Avg Hold:	RMS 100/100	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
Ref Offset 44.5 dB 10 dB/div Ref 40.50 dBm				Mkr1 2	21.598 15 GHz -34.333 dBm
		The second secon			
30.5					
20.5					
10.5					
0.500					
-9.50					
-19.5					DL1 -19.00 dBm
-29.5					1
			and the strength of the		
-39.5	an a				
-49.5					
40.0					
Start 13.000 GHz					Stop 22.000 GHz



End of Test Report