

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

TEST EQUIPMENT

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

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.

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(4)] dB to account for the device operation as a 4 port MIMO transmitter, as per FCC KDB 622911.

Per section 27.53(h)(1) 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 BTS may operate as a 4 port MIMO transmitter.

Per 27.53(h)(3) emissions seen up to 1 MHz outside of authorized operating frequency range band edges shell be measured with a RBW of 1% of the measured emission bandwidth. Any emission seen to be > 1 MHz further outside the band edges shall be measured with a RBW of 1 MHz. However, a narrower RBW of at least 1% of the emission bandwidth is still allowed provided that the measured power is integrated over the full reference bandwidth of 1 MHz.

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

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



EUT: AHF						
	10			Work Order:	TbtTx 2020.06.08.0 BETA	XMit 2020
Serial Number: K919					23-Jun-20	
	a Solutions and Networks			Temperature:		
	hell Hill, John Rattanavong			Humidity:		
Project: Non				Barometric Pres.:		
Tested by: Bran		Power: 54 VDC		Job Site:		
EST SPECIFICATIONS		Test Method		005 0110.	17,00	
C 27:2020		ANSI C63.26:2015				
/0 1112020		71101 00012012010				
OMMENTS						
	osses were accounted for in the reference level offest i	ncluding any attenuators, filters and DC blocks. The	carrier was set to maximu	m for all testing.		
EVIATIONS FROM TES	ST STANDARD					
one						
n figuration #	6	1 1				
onfiguration #	Signature	Furthal				
	olynadio	Frequency	Measured	Max Value	Limit	
rt 4, Band 66 NB loT, 2		Range	Freq (MHz)	(dBm)	< (dBm)	Result
10 M	IHz Bandwidth QPSK Modulation		0110.0		10	
	Low Channel 2115 MHz	1	2110.0	-24.94	-19	Pass
	Low Channel 2115 MHz	2	2108.5 2106.3	-26.84 -25.52	-19	Pass
	Low Channel 2115 MHz	3				
		4			-19	Pass
	High Channel 2195 MHz	1	2200.0	-24.44	-19	Pass
	High Channel 2195 MHz	1 2 2	2200.0 2201.5	-24.44 -25.18	-19 -19	Pass Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz	1 2 3	2200.0	-24.44	-19	Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth		2200.0 2201.5	-24.44 -25.18	-19 -19	Pass Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth QPSK Modulation		2200.0 2201.5 2202.0	-24.44 -25.18 -25.85	-19 -19 -19	Pass Pass Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth QPSK Modulation Low Channel 2117.5 MHz	3	2200.0 2201.5 2202.0 2110.0	-24.44 -25.18 -25.85 -27.23	-19 -19 -19 -19	Pass Pass Pass Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz		2200.0 2201.5 2202.0 2110.0 2108.5	-24.44 -25.18 -25.85 -27.23 -27.99	-19 -19 -19	Pass Pass Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz	3	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2	-24.44 -25.18 -25.85 -27.23 -27.99 -25.78	-19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz	3	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2 2200.0	-24.44 -25.18 -25.85 -27.23 -27.99 -25.78 -27.22	-19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass Pass
15 M	High Channel 2195 MHz High Channel 2195 MHz IHZ Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz	3 1 2 3 1	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2	-24.44 -25.18 -25.85 -27.23 -27.99 -25.78	-19 -19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass
	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz	3 1 2 3 1 2	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2 2200.0 2201.5	-24.44 -25.18 -25.85 -27.23 -27.99 -25.78 -27.22 -26.32	-19 -19 -19 -19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass Pass
	High Channel 2195 MHz High Channel 2195 MHz IHZ Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz	3 1 2 3 1 2	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2 2200.0 2201.5 2202.0	-24.44 -25.18 -27.23 -27.99 -25.78 -27.22 -26.32 -26.14	-19 -19 -19 -19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass Pass
	High Channel 2195 MHz High Channel 2195 MHz IHz Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz Correct Modulation Low Channel 2120 MHz	3 1 2 3 1 2 3 3 1 2 3 3	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2 2200.0 2201.5 2202.0 2201.5 2202.0	-24.44 -25.18 -25.85 -27.23 -27.99 -25.78 -27.22 -26.32 -26.32 -26.14	-19 -19 -19 -19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass Pass
	High Channel 2195 MHz High Channel 2195 MHz High Channel 2195 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz Low Channel 2120 MHz Low Channel 2120 MHz	3 1 2 3 1 2 3 3 2 3 3	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2 2200.0 2201.5 2200.0 2201.5 2202.0 2110.0 2110.0 2108.5	-24.44 -25.18 -27.23 -27.99 -25.78 -27.22 -26.32 -26.14 -27.74 -28.29	-19 -19 -19 -19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass Pass
	High Channel 2195 MHz High Channel 2195 MHz IHZ Bandwidth QPSK Modulation Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz Low Channel 2120 MHz Low Channel 2120 MHz Low Channel 2120 MHz	3 1 2 3 1 2 3 3 1 2 3 3	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2 2200.0 2201.5 2202.0 2110.0 2110.0 2110.0 2108.5 2107.7	-24.44 -25.18 -25.85 -27.23 -27.99 -25.78 -27.22 -26.32 -26.14 -27.74 -28.29 -24.99	-19 -19 -19 -19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass Pass
	High Channel 2195 MHz High Channel 2195 MHz High Channel 2195 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz Low Channel 2117.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz High Channel 2192.5 MHz Low Channel 2120 MHz Low Channel 2120 MHz	3 1 2 3 1 2 3 3 2 3 3	2200.0 2201.5 2202.0 2110.0 2108.5 2107.2 2200.0 2201.5 2200.0 2201.5 2202.0 2110.0 2110.0 2108.5	-24.44 -25.18 -27.23 -27.99 -25.78 -27.22 -26.32 -26.14 -27.74 -28.29	-19 -19 -19 -19 -19 -19 -19 -19 -19 -19	Pass Pass Pass Pass Pass Pass Pass Pass



	Frequency	MHz - 2200 MHz	Measure	ed	Max Value (dBm)	Limit < (dBm)		Result	
	Range		Freq (MI 2110	12)	-24.94	< (dBm) -19		Pass	
1			2110	I	21.07	-15		1 433	
🇾 Keysight Spectrum Ar	nalyzer - Element Materials Techn	ology							P X
X RL RF	50 Ω DC	S	ENSE:INT		ALIGN OFF	DMS	11	:34:31 AM Jun 23	3,2020
		PNO: Wide 🔸	Trig: Free Ru	ın	Avg Type Avg Hold	: 500/500		TRACE 2 TYPE A W DET A N	3456 WWWW
		IFGain:Low	#Atten: 20 dl	3					
Ref C 10 dB/div Ref Log	Offset 41.6 dB 41.60 dBm					MKr1 :		000 00 24.944 c	
31.6					_				
								~~~~~	~~~
21.6					+/				
11.6									
1.00									
1.60				1					
-8.40									
-18.4								-19	9.00 dBm
-28.4									
-38.4									
-48.4									
Start 2.109000	GHz	40 ( <b>D</b> )				<b>a</b>		2.111000	
#Res BW 100 k	KHZ	#VBM	/ 300 kHz*		1	Sweep	1.067	' ms (8001	pts)
MSG					STATUS				
Port 4, B	and 66 NB loT, 2110 N	MHz - 2200 MHz	., 10 MHz Ba	ndwidth	, QPSK Mod	lulation, Low Cł	nannel :	2115 MHz	
	Frequency		Measure	əd	Max Value	Limit			
	Range		Freq (MH		(dBm)	< (dBm)		Result	_
	2		2108.5		-26.84	-19		Pass	
	_	_							
Keysight Spectrum Ar RL RF	nalyzer - Element Materials Technol 50 Ω DC		ENSE:INT		ALIGN OFF		11		
			Center Freq: Trig: Free Ru	2.108500	000 GHz Avg Hold	. 100/100	Radio S	td: None	
		#IFGain:Low	#Atten: 20 di	3	Avginoid		Radio D	evice: BTS	
10 dB/div R	tef 11.60 dBm								
1.60									
Log 1.60 -8.40									
1.60 -8.40									
1.60 -8.40 -18.4									
-1.60 -8.40 -18.4 -28.4			******	olauro and a sure		r	And Second Second		- Andrew Are
1.60 -8.40 -18.4 -28.4 -38.4			*	alamatin adalahasan			App. Sport - Arrit Party	****	
1.60 			******	ol			And the second		
50 40 .4 .4 .4 .4 .4 			*****	alaan Taaliy qaaraa					

 784
 Span 1 MHz

 784
 Free Sew 100 KHz

 #Res BW 100 KHz
 #VBW 300 KHz

 #Res BW 100 KHz
 #Sweep 10 ms

 Channel Power
 Power Spectral Density

 -26.84 dBm / 1 MHz
 -86.84 dBm /Hz

STATUS

MSG



P	ort 4, Band	66 NB loT, 2110	MHz - 2200 MH					nnel 2115 MHz
		Frequency		Measur		Max Value	Limit	
		Range		Freq (MI		(dBm)	< (dBm)	Result
		3		2106.3	3	-25.52	-19	Pass
		- Element Materials Tech						
LXI RL	RF	50 Ω DC		SENSE:INT		ALIGN OFF Avg Type:	DMS	11:37:10 AM Jun 23, 2020
			PNO: Fast +++	Trig: Free R #Atten: 22 d		Avg Hold:		TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N
	Ref Offse	t 41.6 dB					Mkr1 2	2.106 315 0 GHz
10 dB/div Log	Ref 41.6	0 dBm						-25.515 dBm
31.6								
31.0								
21.6								
11.6								
1.60								
-8.40								
-18.4								
								<b>♦</b> '
-28.4 <b>-28.4</b>	www.enderstanuerst	and the second	n, pepter Medica, which have been a	www.combytingtophics.	person personal	teg fan ast ge jinn mannige	*****	*****
-38.4								
-48.4								
Start 2.0	8800 GHz							Stop 2.10800 GHz
#Res BW			#VB	W 3.0 MHz*			Sweep	1.067 ms (8001 pts)
MSG						STATUS		
Po	ort 4, Band (	66 NB IoT, 2110	MHz - 2200 MH	z, 10 MHz Ba	andwid	th , QPSK Modul	ation, High Cha	nnel 2195 MHz
		Frequency		Measur		Max Value	Limit	
		Range		Freq (MI		(dBm)	< (dBm)	Result
		1		2200 (	n	-24 44	_10	Pass





	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	2	2201.5	-25.18	-19	Pass
📜 Keysight Spectrum	Analyzer - Element Materials Technology - Po	ints: 1001, Detector: Average (RMS)			
LXI RL R	F 50 Ω DC	SENSE:INT Center Freq: 2.2015	ALIGN OFF	<b>D</b> -4	11:57:22 AM Jun 23, 202 dio Std: None
		Trig: Free Run	Avg Hold:		no sta. None
	#IFGain	:Low #Atten: 20 dB		Rad	dio Device: BTS
	Ref 11.60 dBm				
Log 1.60					
-8.40					
-18.4					
-28.4					
-38.4		تمليداني وتمتخينية فتعاقفه			
-48.4					
-58.4					
-68.4					
-78.4					
Center 2.202					Span 1 MH
#Res BW 10		#VBW 300	) kHz		#Sweep 10 m
Channel	Power	Power Spec	tral Densit	/	
			,		
-25	18 dBm / 1 мнz	-85.1	8 dBm /	17	
		0011			
MSG			STATUS		

Port 4, Band 6	66 NB IoT, 2110 I	MHz - 2200 MHz,	10 MHz Bandwid	Ith , QPSK Modul	ation, High Chan	nel 2195 MHz
Frequency		Measured	Max Value	Limit		
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	3		2202.0	-25.85	-19	Pass

RL	RF 50 Ω DC		SENSE:INT	ALIGN OFF	11:58:03 AM Jun 23, 202
	-	PNO: Fast ↔ IFGain:Low		Avg Type: RMS Avg Hold: 500/500	TRACE 1 2 3 4 5 TYPE A WWW DET A N N N
dB/div	Ref Offset 41.6 dB Ref 41.60 dBm			Mk	r1 2.202 013 50 GH -25.851 dBi
.6					
.6					
.6					
60					
10					
					-19.00 (
4					-13.001
.4	Mar any and a second			*****	
4					
4					
art 2 205	2000 GHz				Stop 2 220000 Cl
	1.0 MHz	#V	3W 3.0 MHz*	Sw	Stop 2.220000 GF eep 1.067 ms (8001 pt



	Frequency		Measured	Max Value	Limit	
r	Range	-	Freq (MHz)	(dBm)	< (dBm)	Result
	1		2110.0	-27.23	-19	Pass
鱦 Keysight Spectrum Ana	lyzer - Element Materials Te	echnology				
LXI RL RF	50 Ω DC		SENSE:INT	ALIGN OFF Avg Type:	DMS	12:10:44 PM Jun 23, 2020
		PNO: Wide ↔ IFGain:Low	. Trig: Free Run #Atten: 20 dB	Avg Hold:	500/500	TRACE 1 2 3 4 5 0 TYPE A WWWW DET A N N N N
Ref 01	fset 41.6 dB				Mkr1 2.1	10 000 00 GHz
10 dB/div Ref 4	1.60 dBm	2			1	-27.233 dBm
31.6						man and a second
						· · · · · · · · · · · · · · · · · · ·
21.6						
11.6						
				~		
1.60				~~~		
				N		
-8.40				л ^л —		
-18.4			کم			-19.00 dBm
10.4			1			
-28.4						
	······································	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
-38.4						
-48.4						
-40.4						
Start 2.109000 0						top 2.111000 GHz
#Res BW 150 kH		#VE	3W 470 kHz*		Sweep 1	.067 ms (8001 pts
MSG				STATUS		
Dant 4 Dan			lz, 15 MHz Bandwid		tion I and Channe	
Port 4, Bar	Frequency		IZ, 15 MHZ Bandwid Measured	Max Value	Limit	IEI ZTT7.5 WIHZ
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	2		2108.5	-27.99	-19	Pass
						1 )1
Keysight Spectrum Ana	lyzer - Element Materials Te 50 Ω DC	echnology - Points: 1001,	Detector: Average (RMS) SENSE:INT	ALIGN OFF		12:11:31 PM Jun 23, 2020
			Center Freq: 2.108 Trig: Free Run			dio Std: None
		#IFGain:Low	#Atten: 20 dB	Avginola.		dio Device: BTS

	↔ #IFGain:Low	Trig: Free Run #Atten: 20 dB	Avg Hold: 100/100	Radio Device: BTS
odB/div Ref 11.60	dBm			
.60				
40				
.4				
3.4				
3.4		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
3.4				
3.4				
3.4				
3.4				
enter 2.109 GHz Res BW 150 kHz		#VBW 470	kHz	Span 1 MH #Sweep 10 n
				•
Channel Power		Power Spect	tral Density	
		07.00		
-27.99 dB	<b>m</b> / 1 MHz	-87.95	Э dBm /нz	
-27.99 dB	m / 1 MHz	-87.95	abm /Hz	
-27.99 dB	m / 1 MHz	-87.98	abm /Hz	
-27.99 dB	m / 1 MHz	-87.98	abm /Hz	
-27.99 dB	5 <b>m</b> / 1 MHz	-87.95	GBM /Hz	



	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	3		2107.2	-25.78	-19	Pass
	rum Analyzer - Element Materials Tech RF 50 Q DC					
LX RL	RF 50 Ω DC	PNO: Fast ↔→ IFGain:Low	ENSE:INT Trig: Free Run #Atten: 22 dB	ALIGN OFF Avg Type: Avg Hold:	RMS 100/100	12:12:10 PM Jun 23, 2020 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N
10 dB/div	Ref Offset 41.6 dB Ref 41.60 dBm				Mkr1 2	107 230 0 GHz -25.778 dBm
_ 3						
31.6						
21.6						
11.6						
1.60						
-8.40						
-18.4						d <u>Hm</u> 1
-28.4 <b>Manager</b> ali	ie jere genetalist die eksplosische die besternen.	and and a property of the second s	uniterally standard and a second	Angla Angla Angla papalaphiliphiliphiliphiliphiliphiliphil	and the second	ang an ang ang ang ang ang ang ang ang a
-38.4						
-48.4						
Start 2.0880 #Res BW 1.		#VB)	V 3.0 MHz*			Stop 2.10800 GHz .067 ms (8001 pts)
MSG		#767		STATUS	- Sweep 1	toor ms (soor pts)
Port 4	, Band 66 NB IoT, 2110 I	иНz - 2200 MHz,			ation, High Chanr Limit	nel 2192.5 MHz
	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	< (dBm)	Result
	1 Nange		2200.0	27.22	< (ubiii) 10	Base





	Frequency		Measured	Max Value	Limit		
	Range		Freq (MHz)	(dBm)	< (dBm)	Result	
	2		2201.5	-26.32	-19	Pass	
	zer - Element Materials Technolo						
LXI RL RF	50 Ω DC	SI	ENSE:INT Center Freq: 2.201	ALIGN OFF		12:38:28 PM Jun 23, 202 adio Std: None	10
			Trig: Free Run	Avg Hold:		adio Sta: None	
	#1	FGain:Low	#Atten: 20 dB		R	adio Device: BTS	
10 dB/div Ref	11.60 dBm						
Log							
1.60							
-8.40							
-18.4							
-28.4							
-38.4	- the area of the sector of th	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·····				
-48.4							
-58.4							
-68.4							
-78.4							
Center 2.202 GH #Res BW 150 kH			#VBW 47			Span 1 MH #Sweep 10 m	
#Res DW 1J0 Kr	12		#9099 47			#Sweep 1011	2
Channel Po			Deuter Cree	tral Densit			
Channel Po	wer		Power Spe	ctral Density	/		
00.00			00.0	0 .ID			
-26.32	2 dBm / 1 мна	Z	-86.3	<mark>32 dBm</mark> /⊮	-IZ		
MSG				STATUS			

Port 4, Band 6	6 NB IoT, 2110 N	IHz - 2200 MHz, 1	15 MHz Bandwidt	h , QPSK Modula	ation, High Chanr	nel 2192.5 MHz
Frequency		Measured	Max Value	Limit		
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	3		2202.0	-26.14	-19	Pass

RL RF 50 Ω DC	S	ENSE:INT	ALIGN OFF	12:39:00 PM Jun 23, 202
	PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 18 dB	Avg Type: RMS Avg Hold: 500/500	TRACE 1 2 3 4 5 TYPE A DET A NNNN
Ref Offset 41.6 dB B/div Ref 41.60 dBm			Mł	r1 2.202 006 75 GH -26.143 dBr
6				
6				
6				
4				-19.00 c
4				
4		*****	feeren han an aine ar agt ear an aine an fear an an aine an an an an aine an an an an aine an an an an an an a	3utu-di-qat-qat-qat-ata
4				
nt 2.202000 GHz es BW 1.0 MHz		V 3.0 MHz*		Stop 2.220000 GF /eep 1.067 ms (8001 pt



		110 MHZ - 220	0 MHz, 20 N	IHz Bandwi	dth, QPSK Modu	ulation, Low C	hannel	2120 MHz	
	Frequenc			easured	Max Value	Limit			
	Range			eq (MHz)	(dBm)	< (dBm	)	Result	
	1			2110.0	-27.74	-19		Pass	
	rum Analyzer - Element Materials	Technology						)-é	
LXU RL	RF 50 Ω DC		SENSE:INT	0.000	ALIGN OFF Avg Type	RMS	01	:13:39 PM Jun 23 TRACE 1 2	3,2020 3 4 5 6
		PNO: Wide IFGain:Lov		Free Run n: 20 dB	Avg Hold:	: 500/500		TRACE 1 2 TYPE A W DET A N	NNNN
		IFGain.Lo	/ #/tite	1. 20 GB		Mkr1	2 110	000 00 0	
10 dB/div	Ref Offset 41.6 dB Ref 41.60 dBm						2.110	-27.743 c	IBm
10 dB/div									
31.6								1 mm	
							1		
21.6									
11.6									
						N			
1.60						MANN			
					mmmuh	×1/			
-8.40					www				
					M				
-18.4				مسر 1	~			-19	9.00 dBm
-28.4				کر سرچ					
-28.4				mm					
-38.4									
-48.4									
Start 2,1090	000 GHz	I	1	I			Stor	2.111000	GHz
Start 2.1090 #Res BW 20			#VBW 620	kHz*		Swee	Stop p 1.06	2.111000 7 ms (8001	GHz pts)
			#VBW 620	kHz*	STATUS	Swee	Stop p 1.06	2.111000 7 ms (8001	GHz   pts)
#Res BW 20	00 kHz						p 1.06	7 ms (8001	GHz   pts)
#Res BW 20	00 kHz 4, Band 66 NB loT, 2	110 MHz - 220	00 MHz, 20 N	IHz Bandwi	dth, QPSK Modu	ulation, Low C	p 1.06	7 ms (8001	GHz   pts)
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc	110 MHz - 220	00 MHz, 20 N M	IHz Bandwi easured	dth, QPSK Modi Max Value	ulation, Low C Limit	p 1.06	7 ms (8001 2120 MHz	GHz   pts)
#Res BW 20	00 kHz 4, Band 66 NB loT, 2	110 MHz - 220	00 MHz, 20 M M Fro	IHz Bandwi easured eq (MHz)	dth, QPSK Modu Max Value (dBm)	ulation, Low C Limit < (dBm	p 1.06	7 ms (8001 2120 MHz Result	GHz   pts)
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc Range	110 MHz - 220	00 MHz, 20 M M Fro	IHz Bandwi easured	dth, QPSK Modi Max Value	ulation, Low C Limit	p 1.06	7 ms (8001 2120 MHz	GHz   pts)
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc Range	110 MHz - 220 S <b>y</b>	00 MHz, 20 N M Fro	IHz Bandwi easured eq (MHz) 2108.5	dth, QPSK Modu Max Value (dBm)	ulation, Low C Limit < (dBm	p 1.06	7 ms (8001 2120 MHz Result	pts)
#Res BW 20	4, Band 66 NB IoT, 2 Frequenc Range 2	110 MHz - 220 S <b>y</b>	00 MHz, 20 N M Fre 1001, Detector: Av SENSE:INT	IHz Bandwi easured eq (MHz) 2108.5	dth, QPSK Modu Max Value (dBm) -28.29	ulation, Low C Limit < (dBm	p 1.06	7 ms (8001 2120 MHz Result Pass	
#Res BW 20	4, Band 66 NB IoT, 2 Frequenc Range 2 rum Analyzer - Element Materials	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	I pts) 
#Res BW 20	4, Band 66 NB IoT, 2 Frequenc Range 2 rum Analyzer - Element Materials	110 MHz - 220 S <b>y</b>	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass	
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc Range 2 rum Analyzer - Element Materials RF 50 Ω 0C	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	
#Res BW 20	4, Band 66 NB IoT, 2 Frequenc Range 2 rum Analyzer - Element Materials	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc Range 2 rum Analyzer - Element Materials RF 50 Ω 0C	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	I pts) 
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc Range 2 rum Analyzer - Element Materials RF 50 Ω 0C	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc Range 2 rum Analyzer - Element Materials RF 50 Ω 0C	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	I pts) 
#Res BW 20	00 kHz 4, Band 66 NB loT, 2 Frequenc Range 2 rum Analyzer - Element Materials RF 50 Ω 0C	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	
#Res BW 20           MSG           Port /           Image: Constraint of the system           Image: Constraint of the system	00 kHz 4, Band 66 NB loT, 2 Frequenc Range 2 rum Analyzer - Element Materials RF 50 Ω 0C	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	
#Res BW 20           MSG           Port           Image: Comparison of the system           Image: Comparison of the system	00 kHz 4, Band 66 NB loT, 2 Frequenc Range 2 rum Analyzer - Element Materials RF 50 Ω 0C	110 MHz - 22( ; <b>y</b> ; Technology - Points	00 MHz, 20 M M Fri 1001, Detector: Av SENSE:INT Cente Cente Cente	IHz Bandwi easured eq (MHz) 2108.5 rage (RMS) r Freq: 2.108 Free Run	dth, QPSK Modi Max Value (dBm) -28.29	ulation, Low C Limit < (dBm -19	p 1.06 hannel : ) Radio S	7 ms (8001 2120 MHz Result Pass :14:40 PM Jun 23 std: None	





Freq (MHz) 2107.7 SENSE:INT D: Fast →→ Trig: Free Run #Atten: 22 dB	(dBm) -24.99	100/100	Result Pass 01:15:16 PMJun 23, 2020 TRACE 12:24 5: 6 TYPE ANNNNN 107 672 5 GHz -24.992 dBm
SENSE:INT	ALIGN OFF	RMS 100/100	01:15:16 PMJun 23, 2020 TRACE 12 34 5 6 TYPE 12 34 5 7 TYPE 12 34
): Fast 🛶 Trig: Free Run	Avg Type:	100/100	01:15:16 PM Jun 23,2020 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN 107 672 5 GHz
): Fast 🛶 Trig: Free Run	Avg Type:	100/100	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN 107 672 5 GHz
		Mkr1 2.	107 672 5 GHz -24.992 dBm
			-19.00 d ^m m
			-19.00 0
ารรัฐแรงสมุณที่สูงการสุดที่สารสมุณารณณีการสุดิภาพสุดที่สารสุดที่สารสุดที่สารสุด	ugalahijiya kanada k	an a	narial <mark>arenaelen ingiliaren manglet (gibi</mark> len
#VBW 3.0 MHz*			Stop 2.10800 GHz 067 ms (8001 pts)
	STATUS		
- 2200 MHz 20 MHz Bandwid	dth OPSK Modul	ation High Chan	nel 2190 MHz
		- 2200 MHz, 20 MHz Bandwidth, QPSK Modul Measured Max Value	#VBW 3.0 MHz* Sweep 1. status - 2200 MHz, 20 MHz Bandwidth, QPSK Modulation, High Chanr Measured Max Value Limit

Port 4, Band	66 NB IoT, 2110	MHz - 2200 MHz	, 20 MHz Bandwie	dth, QPSK Modul	lation, High Chan	nel 2190 MHz
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	1		2200.0	-27.01	-19	Pass





	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	2	2201.5	-26.58	-19	Pass
	er - Element Materials Technology - Points:				
LXI RE RF	50 Ω DC	SENSE:INT Center Freq: 2.2015	ALIGN OFF	D-4	01:35:35 PM Jun 23, 2020 io Std: None
		🛶 Trig: Free Run	Avg Hold: 1	00/100	
	#IFGain:Lov	w #Atten: 20 dB		Rad	io Device: BTS
	11.60 dBm				
Log 1.60					
-8.40					
-18.4					
-28.4					
-38.4					
-48.4					
-58.4					
-68.4					
78.4					
-7.0.4					
Center 2.202 GHz					Span 1 MH
#Res BW 200 kH	Z	#VBW 620	) kHz		#Sweep 10 m
Channel Pov	wer	Power Spec	tral Density		
00 50		00 5			
-26.58	dBm / 1 MHz	-86.5	8 dBm /н	Z	
MSG			STATUS		

Port 4, Band	66 NB IoT, 2110	MHz - 2200 MHz,	20 MHz Bandwid	dth, QPSK Modul	ation, High Chanı	nel 2190 MHz	
	Frequency		Measured	Max Value	Limit		
	Range		Freq (MHz)	(dBm)	< (dBm)	Result	
	3		2202.1	-27.34	-19	Pass	

SENSE:INT Trig: Free Run #Atten: 18 dB	ALIGN OFF Avg Type: RMS Avg Hold: 500/500	kr1 2.202 094 50 GH -27.341 dB
		kr1 2.202 094 50 GH -27.341 dBi
		-19.00 (
	and the gramma the state of the	
BW 3.0 MHz*		Stop 2.220000 GF weep 1.067 ms (8001 pt
	BW 3.0 MHz*	BW 3.0 MHz*