

XMit 2019.05.15

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	E4422B	TGQ	15-Mar-18	15-Mar-21
Block - DC	Fairview Microwave	SD3379	AMI	7-Sep-18	7-Sep-19
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNO	7-Jun-19	7-Jun-20
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	13-Dec-18	13-Dec-19

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 were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.



	emote Microphone					Work Order:				
Serial Number: EF	P3.7					Date:	9-Jul-19			
Customer: N	uance Hearing					Temperature:	21.5 °C			
Attendees: Cl						Humidity: 57.6% RH				
Project: No						Barometric Pres.:				
	ndrew Rogstad		Pov	ver: 4.8 VDC		Job Site:	MN08			
EST SPECIFICATION	NS			Test Method						
CC 15.247:2019				ANSI C63.10:2013						
COMMENTS										
lone										
DEVIATIONS FROM T	EST STANDARD									
EVIATIONS FROM T	EST STANDARD									
	TEST STANDARD	Signature	an	Royala						
lone		Signature	a.	Regularit Frequency Rance	Measured Freg (MHz)	Max Value (dBc)	Limit ≤ (dBc)	Result		
lone	6	Signature	and	Frequency				Result N/A		
lone	6 hel, 2402 MHz	Signature	a.	Frequency Range	Freq (MHz)	(dBc)	≤ (dBc)			
Configuration # BLE/GFSK Low Chann	6 nel, 2402 MHz nel, 2402 MHz	Signature	a.	Frequency Range Fundamental	Freq (MHz) 2401.74	(dBc) N/A	≤ (dBc) N/A	N/A		
Configuration # BLE/GFSK Low Chann BLE/GFSK Low Chann	6 hel, 2402 MHz hel, 2402 MHz hel, 2402 MHz	Signature	ard ,	Frequency Range Fundamental 30 MHz - 12.5 GHz	Freq (MHz) 2401.74 2397.34	(dBc) N/A -50.09	≤ (dBc) N/A -20	N/A Pass		
tone Configuration # BLE/GFSK Low Chann BLE/GFSK Low Chann BLE/GFSK Low Chann	6 nel, 2402 MHz nel, 2402 MHz nel, 2402 MHz el, 2402 MHz	Signature	and ,	Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz	Freq (MHz) 2401.74 2397.34 24153.03	(dBc) N/A -50.09 -56.22	≤ (dBc) N/A -20 -20	N/A Pass Pass		
Ione Configuration # BLE/GFSK Low Chann BLE/GFSK Low Chann BLE/GFSK Mid Channe BLE/GFSK Mid Channe	6 nel, 2402 MHz nel, 2402 MHz el, 2442 MHz el, 2442 MHz el, 2442 MHz	Signature	a.	Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental	Freq (MHz) 2401.74 2397.34 24153.03 2441.74	(dBc) N/A -50.09 -56.22 N/A	≤ (dBc) N/A -20 -20 N/A	N/A Pass Pass N/A		
Ione Configuration # BLE/GFSK Low Chann BLE/GFSK Low Chann BLE/GFSK Wid Channe BLE/GFSK Mid Channe BLE/GFSK Mid Channe	6 nel, 2402 MHz lel, 2402 MHz el, 2402 MHz el, 2442 MHz el, 2442 MHz el, 2442 MHz	Signature	ard ,	Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz	Freq (MHz) 2401.74 2397.34 24153.03 2441.74 3636.57	(dBc) N/A -50.09 -56.22 N/A -60.21	≤ (dBc) N/A -20 -20 N/A -20	N/A Pass Pass N/A Pass		
Ione Configuration # BLE/GFSK Low Chann BLE/GFSK Low Chann BLE/GFSK Mid Channe BLE/GFSK Mid Channe	6 hel, 2402 MHz hel, 2402 MHz hel, 2402 MHz el, 2442 MHz el, 2442 MHz el, 2442 MHz el, 2442 MHz	Signature	a.	Frequency Range Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz Fundamental 30 MHz - 12.5 GHz 12.5 GHz - 25 GHz	Freq (MHz) 2401.74 2397.34 24153.03 2441.74 3636.57 24105.73	(dBc) N/A -50.09 -56.22 N/A -60.21 -57.21	≤ (dBc) N/A -20 -20 N/A -20 -20	N/A Pass Pass N/A Pass Pass		



	Frequency	BLE/GFSK Low Channel, Measured	2402 MHz Max Value	Limit	
	Range	Freq (MHz)	(dBc)	≤ (dBc)	Result
	Fundamental	2401.74	N/A	N/A	N/A
	Fundamental	2401.74	N/A	N/A	IN/A
	er - Element Materials Technology				
LXI RL RF	50 Ω DC	SENSE:INT	ALIGN OFF #Avg Type	Log-Pwr	01:11:27 AM Jul 10, 2019
	PNO: Wi IFGain:L		#Avg Type	. Log-r wi	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P
Bef Offs	et 21.72 dB			Mkr1 2.4	01 736 60 GHz
10 dB/div Ref 10	.00 dBm				6.07 dBm
	1				
0.00					
-10.0					
-20.0					
-30.0					
-40.0					
-40.0					
-50.0					
-60.0					
70.0					
-70.0					
-80.0					
Center 2.4020000 #Res BW 100 kHz	GHz	#VBW 300 kHz		Sweep 1	Span 1.000 MHz .092 ms (8192 pts)
MSG			STATUS		
		BLE/GFSK Low Channel,	2402 MH-		
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBc)	≤ (dBc)	Result

BLE/GFSK Low Channel, 2402 MHz							
Frequency	Frequency Measured Max Value Limit						
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result			
30 MHz - 12.5 GHz	2397.34	-50.09	-20	Pass			

5	ENSETINT	ALIGN OFF		01:11:51 AM Jul	10 201
PNO: Fast 😱 IFGain:Low	Trig: Free Run #Atten: 10 dB		Log-Pwr	TRACE	2345
			N		
	Ť				
مسليلي المراجع المسالي	And the second second	المأور ووالمروط الشورور فالمرفق والطوريقين	An an the table of the second	and a state of the second s	North March
					a tradien
				Stop 12.50 40.96 ms (819	
	PNO: Fast IFGain:Low	IFGain:Low #Atten: 10 dB	PNO: Fast Trig: Free Run #Atten: 10 dB	#Avg Type: Log-Pwr PNO: Fast Trig: Free Run #Atten: 10 dB	PNO: Fast IFGain:Low Trig: Free Run #Atten: 10 dB #Avg Type: Log-Pwr Trace Det Mkr1 2.397 3 -44.02

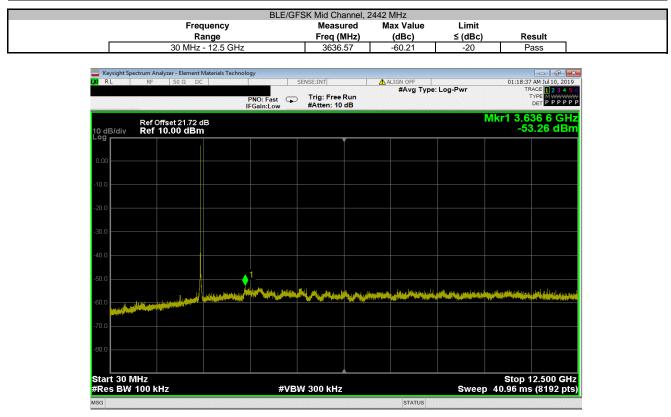


Freque		SK Low Channel, 2 Measured	Max Value	Limit			
Rang		Freq (MHz)	(dBc)	≤ (dBc)	Result		
12.5 GHz -		24153.03	-56.22	-20	Pass		
Keysight Spectrum Analyzer - Element Mate	vials Taskaalam;						
X RL RF 50 Ω DC		ENSE:INT	ALIGN OFF		01:12:18 AM Jul 10, 2019		
			#Avg Type	: Log-Pwr	TRACE 1 2 3 4 5		
	PNO: Fast	Trig: Free Run #Atten: 10 dB			TYPE MWWWW DET PPPP		
	II Gam.cow			Mike	1 24.153 0 GH		
Ref Offset 21.72 dB				WIKI	-50.15 dBn		
10 dB/div Ref 10.00 dBm							
0.00							
-10.0							
-10.0							
-20.0							
-20.0							
-30.0							
-40.0							
					▲1		
-50.0				and a second lase.	a to payoff, and a statistical state of the		
	والمستند أشرب فالمعطور والمقادر أتناطرها ومتنار والشرو				والمتعادية والمحدولة متأل فالتا المتعادين والمراد والمراد		
-60.0 10.0 - 20.0							
-70.0							
-80.0							
					at of ana at		
Start 12.500 GHz #Res BW 100 kHz	#\/D\	V 300 kHz		Swoop 4	Stop 25.000 GH		
#Res DW 100 KHZ	#VBV	V 300 KH2	300 kHz Sweep 40.96 ms (8192 p				

BLE/GFSK Mid Channel, 2442 MHz							
Frequency	Measured	Max Value	Limit				
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result			
Fundamental	2441.74	N/A	N/A	N/A			

RL RF 50 Ω DC	SENSE:INT	ALIGN OFF	01:18:14 AM Jul 10, 201
	PNO: Wide Trig: Free Run IFGain:Low #Atten: 10 dB	#Avg Type: Log-Pwr	TRACE 1 2 3 4 TYPE M WWW DET P P P P
Ref Offset 21.72 dB dB/div Ref 10.00 dBm		Mkr	1 2.441 737 94 GH 6.95 dB
0.0			
0.0			
.0			
0.0			
.0			
.0			
.0			
enter 2.4420000 GHz Res BW 100 kHz	#VBW 300 kHz	Swe	Span 1.000 M ep 1.092 ms (8192 p
Res BW 100 kHz	#VBW 300 kHz	Swe	ep 1.092 ms (8192





BLE/GFSK Mid Channel, 2442 MHz						
Frequency	Measured	Max Value	Limit			
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result		
12.5 GHz - 25 GHz	24105.73	-57.21	-20	Pass		

RL		RF	50 Ω	ent Materials T		CI	ENSE:INT	A	ALIGN OFF		01-10-5	
KL.	251.21	NF	20.25	DC		1 3	ENSE.INT		#Avg Type	l og Dur		RACE 1 2 3 4
					PNO: Fast IFGain:Low	Ģ	Trig: Free R #Atten: 10 c		#Avg Type	. Log-F Wi		TYPE MWWW DET PPPP
) dB			fset 21.7 0.00 di							Μ	kr1 24.1 -5	105 7 GH 0.26 dB
^{og} Г							Y		1	1		
.00 -												
0.0												
0.0												
0.0 -												
0.0												
0.0												
												1
0.0												_
			desta independent. Da				ما فصحاص م الما ال	والمحادثة والمناطقا	at http://www.astlenited.ite		as a set better did by	
					na (na series) (100 (na best han bind) na series (100 (na series and series))		and the second states in the	والمرادمين التقاريمي	in all the second second second	the fail land of the option	And Manager and L.	
0.0												
0.0												
0.0												
L	12.50		,								Ston	25.000 GI
	BW 1				#	VBV	V 300 kHz			Sweep		s (8192 p



		BLE/GFSK Hig					
	Frequency		easured	Max Value	Limit		
	Range		eq (MHz)	(dBc)	≤ (dBc)	Result	_
	Fundamental	2	479.74	N/A	N/A	N/A	
Keysight Spectrum Ar	nalyzer - Element Materials Technology 50 Ω DC	SENSE:INT		ALIGN OFF		01:25:36 AM Jul 10,	
	30 32 DC			#Avg Type	: Log-Pwr	TRACE 2	4 5 6
	PN IEC		Free Run n: 10 dB			TRACE 1 2 3 TYPE MWW DET P P F	PPP
		Jameon			Mkr1 2	.479 735 14 0	
10 dB/div Ref	Offset 21.72 dB 10.00 dBm					6.51 d	
Log	1						
0.00							
-10.0							
-10.0							
-20.0							
20.0							
-30.0							
-40.0							
-50.0							
-60.0							
-70.0							
-80.0							
-08.0							
Center 2.48000					_	Span 1.000	MHz
#Res BW 100 k	(62	#VBW 300	KHZ		Sweep	1.092 ms (8192	pts)
MSG				STATUS			
		BLE/GFSK Hig	n Channel	2480 MHz			_
	Frequency		easured	Max Value	Limit		
	Range	Fre	eq (MHz)	(dBc)	≤ (dBc)	Result	
	30 MHz - 12.5 GHz		487.16	-53.08	-20	Pass	

RL	pectrum Analyzer - Element RF 50 Ω D			SENSE:INT	<u>A</u> A	LIGN OFF		01:25:5	9 AM Jul 10, 201
		P	PNO: Fast 😱	Trig: Free F #Atten: 10		#Avg Type:	Log-Pwr		RACE 1234 TYPE MWWW DET PPPP
) dB/div	Ref Offset 21.72 Ref 10.00 dBr	dB n					I	Mkr1 2.4 -4	87 2 GI 6.57 dB
-9									
.00									
0.0									
0.0									
0.0									
0.0		1							
0.0		Ţ							
3.0 		anni similari da	باللاس الميانية المراجع	the street with the state of th	والمنافق والمراد	n di se d	an a	ميرية إستاقي ما الجريا مرياة إستاقي ما الجريا	
0.0									
0.0									
tart 30								Stop	12.500 GI
Res BW	/ 100 kHz		#VB	N 300 kHz			Sweep	40.96 m	s (8192 p



	BLE/GF	SK High Channel,			
Frequency		Measured	Max Value	Limit	
Range		Freq (MHz)	(dBc)	≤ (dBc)	Result
12.5 GHz - 25 GH	Ηz	23924.12	-56.21	-20	Pass
Keysight Spectrum Analyzer - Element Materials Tecl	nology				
μ RL RF 50 Ω DC		SENSE:INT	ALIGN OFF		01:26:30 AM Jul 10, 2019
			#Avg Type	: Log-Pwr	TRACE 1 2 3 4 5
	PNO: Fast	Trig: Free Run #Atten: 10 dB			TYPE M WWWW DET P P P P P
	IFGain.Low	mitten. To ub			and 02 004 4 CU
Ref Offset 21.72 dB				IVIP	(r1 23.924 1 GHz
10 dB/div Ref 10.00 dBm					-49.70 dBm
		Ĭ			
0.00					
0.00					
-10.0					
-20.0					
-30.0					
-40.0					
					▲ 1
-50.0					
-50.0	مالاسليب جاريران	A DESCRIPTION OF A DESC	and the state of the law of the design of		
-60.0	and a line of the state of the line of the state of the s	Charles in the second distance			
-70.0					
-80.0					
Start 12.500 GHz		A			Stop 25.000 GHz
#Res BW 100 kHz	#\/D\	A/ 300 kHz		Sweep	40.96 ms (8192 pts
#Res DW TOU KHZ	#VD1	W 300 KHZ			10100 1110 (0102 pto



XMit 2019.09.05

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
Meter - Multimeter	Fluke	117	MLS	23-Jan-17	23-Jan-20
Power Supply - DC	Agilent	U8002A	TPZ	NCR	NCR
Generator - Signal	Agilent	N5173B	TIW	5-Jul-17	5-Jul-20
Cable	Micro-Coax	UFD150A-1-0720-200200	MNL	15-Sep-19	15-Sep-20
Attenuator	S.M. Electronics	SA26B-20	RFW	13-Feb-19	13-Feb-20
Block - DC	Fairview Microwave	SD3379	AMI	6-Aug-19	6-Aug-20
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	1-May-19	1-May-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.



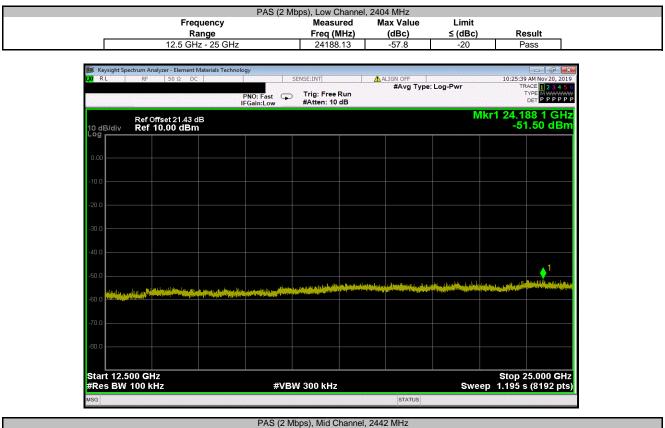
							TbtTx 2019.08.30.0	XMit 2019	
	Remote Microphone					Work Order:			
Serial Number:							19-Nov-19		
	Nuance Hearing				Temperature: 22.3 °C				
	John Quach						33.6% RH		
Project:						Barometric Pres.:			
	Dustin Sparks		Power:	Battery		Job Site:	MN08		
EST SPECIFICAT	IONS			Test Method					
CC 15.247:2019				ANSI C63.10:2013					
COMMENTS									
eference level off	set on spectrum analyzer incl	udes 20 dB attenuator, DC block	c and measurement	cable.					
EVIATIONS FROM	M TEST STANDARD								
None									
		3	ANT						
Configuration #	1	\sim	Instint	Sparts					
		Signature							
				Frequency	Measured	Max Value	Limit		
				Range	Freq (MHz)	(dBc)	≤ (dBc)	Result	
AS (2 Mbps), Low	Channel, 2404 MHz			Fundamental	2404.01	N/A	N/A	N/A	
AS (2 Mbps), Low	Channel, 2404 MHz			30 MHz - 12.5 GHz	2395.81	-54.45	-20	Pass	
AS (2 Mbps), Low	Channel, 2404 MHz			12.5 GHz - 25 GHz	24188.13	-57.8	-20	Pass	
AS (2 Mbps), Mid	Channel, 2442 MHz			Fundamental	2442.01	N/A	N/A	N/A	
AS (2 Mbps), Mid	Channel, 2442 MHz			30 MHz - 12.5 GHz	3163.1	-60.61	-20	Pass	
AS (2 Mbps), Mid	Channel, 2442 MHz			12.5 GHz - 25 GHz	19431.39	-58.22	-20	Pass	
AS (2 Mbps), High	Channel, 2476 MHz			Fundamental	2476	N/A	N/A	N/A	
	Channel, 2476 MHz			30 MHz - 12.5 GHz	8080.47	-59.55	-20	Pass	
				12.5 GHz - 25 GHz	23889.02	-57.91	-20	Pass	
PAS (2 Mbps), High				30 MHz - 12.5 GHz	8080.47	-59.55	-20		





RL	ctrum Analyzer - Element 1 RF 50 Ω DC		57	SENSE	INT		ALIGN OFF		10:24:3	6 AM Nov 20, 20
			PNO: Fast FGain:Low		rig: Free Atten: 10	Run	#Avg Type	: Log-Pwr	TI	RACE 1234 TYPE MWWW DET PPPP
) dB/div	Ref Offset 21.43 d Ref 10.00 dBm	IB I							Mkr1 2.3 -4	95 8 GH 8.15 dBi
^{pg}										
00										
.0										
.0										
	•	1								
.0	العربين.		Mail Surface and	uladi		فاللاط والدور وساطة	a later and the states		والبين ويعالن أيمكن	ىرى يەلىلغۇرى بالاخلارلىرى
		Contraction of the local division of the loc			Antonithe.	All the state of the second se	and the second states of the s	A STREET, Included and A street, and a street of the stree		in in a station of the life of the second
.0										
art 30 M tes BW	IHz 100 kHz		#\	/BW 3	00 kHz			Swe	Stop	12.500 GF s (8192 pt
3							STATUS			

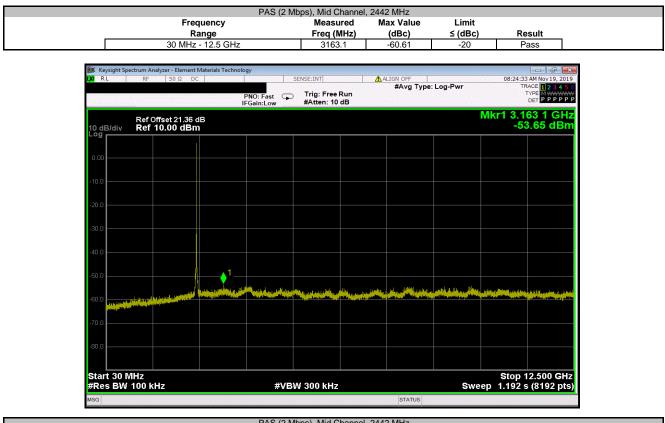




	PAS (2 Mbps), Mid Cha	annel, 2442 MHz			
Frequency	Measure	ed Max Valu	e Limit		
Range	Freq (Mł	lz) (dBc)	≤ (dBc)	Result	
Fundamental	2442.0	I N/A	N/A	N/A	

RL RF 50 Ω DC	SEL	NSE:INT	ALIGN OFF		08:23:34 AM Nov 19, 20
	PNO: Wide 🖵	Trig: Free Run #Atten: 10 dB	#Avg Type:		TRACE 1 2 3 4 TYPE M WWW DET P P P P
Ref Offset 21.36 dB dB/div Ref 10.00 dBm				Mkr1 2	.442 005 3 GH 6.96 dB
9		1			
.0					and the second
0 Marchart					Mark and a second s
0					
0					
0					
0					
0					
nter 2.442000 GHz					Span 3.000 M
es BW 100 kHz	#VBW	300 kHz		Sweep 1	Span 3.000 M .092 ms (8192 p





PAS (2 Mb	ops), Mid Channel	2442 MHz			
Frequency	Measured	Max Value	Limit		
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result	
12.5 GHz - 25 GHz	19431.39	-58.22	-20	Pass	1

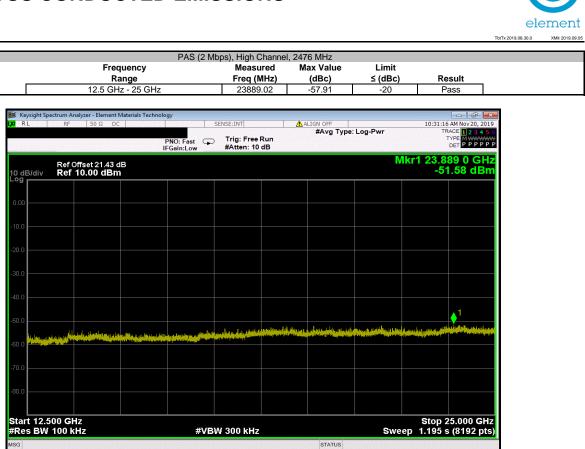
RL	RF		nt Materials Te		S	ENSE:INT		ALIGN OFF		08:25:	30 AM Nov 19, 20
	Tu Tu	1.20 12		PNO: Fast IFGain:Low		Trig: Free F #Atten: 10	Run	#Avg Type	: Log-Pwr		TRACE 1 2 3 4 5 TYPE MWWW DET P P P P F
) dB/div		set 21.36).00 dB								Mkr1 19. -{	431 4 GH 51.26 dBi
^{, g}											
00											
0.0											
).0											
.0											
).0											
).0							▲1				
	المسالة			la pela sa mangang bagang bagang bagang bagi Magang pagtang baging			المراجع ومعاداتهم		den linerike n	ile websternet and the base	
).() <mark>(1999-1997)</mark>	A COLORED AND A										
).0											
).0											
	500 GHz									Stop	25.000 GH
Res BW	/ 100 kH:	Z		#	VBV	V 300 kHz			Sv	veep 1.195	s (8192 pt



		PAS (2 Mb	ops), High Channel			
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBc)	≤ (dBc)	Result
	Fundamental		2476	N/A	N/A	N/A
🚺 Keysight Spectrum Analyz	er - Element Materials Techno	logy				
LXI RL RF	50 Ω DC	S	ENSE:INT	ALIGN OFF		10:29:17 AM Nov 20, 2019
			Trig: Free Run	#Avg Type	: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P
		PNO: Wide 😱	#Atten: 10 dB			DET PPPPP
D.60%-					Mkr1	2.475 997 6 GHz
10 dB/div Ref 10	et 21.43 dB . 00 dBm					6.33 dBm
Log		1	V 1			
0.00						
						\sim
-10.0						
						- A A
-20.0						
						Must.
-30.0						[*] *~~**
-40.0						
-50.0						
-60.0						
-70.0						
-80.0						
Center 2.476000 (Span 3.000 MHz
#Res BW 100 kHz		#VBV	V 300 kHz		Sweep	1.092 ms (8192 pts)
MSG				STATUS		
		PAS (2 Mb	ops), High Channel			
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBc)	< (dBc)	Result

PAS (2 M	/lbps), High Channe	I, 2476 MHz			
Frequency	Measured	Max Value	Limit		
Range	Freq (MHz)	(dBc)	≤ (dBc)	Result	
30 MHz - 12.5 GHz	8080.47	-59.55	-20	Pass	

RL	ctrum Analyzer - Element RF 50 Ω D0		57	SENSE:INT	A .	ALIGN OFF		10:20:15	5 AM Nov 20, 201
KC	10 30 32 00		PNO: Fast Gain:Low		Run	#Avg Type:	Log-Pwr	TF	ACE 1 2 3 4 5 TYPE MWWW DET P P P P P
) dB/div	Ref Offset 21.43 (Ref 10.00 dBn							Mkr1 8.0 -53	80 5 GH 3.22 dBr
° ^g									
.00									
0.0									
D.0									
J.U									
0.0									
0.0									
0.0						▲1			
5.0		فللاحد والمتعلقات والمعادية	and the second second second	hand the state of the second state of the seco	Latting Lange and Le	فالمتلج المستحد والمتلج المستحد	and the second states of the	والمحاط الارتقاط ووالتقاعون	le Henrik Habilita
0.0 1000 101			in Assets, so that	al Den		, and a set of the set of the set	والتشريب بالمتحد ومتتقف	. ويقوي والافتكان ويتغنيهم و	an an an an Air an
0.0									
0.0									
tart 30 M Res BW			#V	BW 300 kHz	,		SWA	Stop 1 ep 1.192 s	12.500 GH
G	TWO KITZ		#¥			STATUS		аср. III (3/2 s	Ao ioz pi





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. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Tx on low channel (2402 MHz), mid channel (2442 MHz), and high channel (2480 MHz); BLE
Transmitting PAS (2 Mbps) - mid channel (2442 MHz) and high channel (2476 MHz) modulated

POWER SETTINGS INVESTIGATED

DC via 120VAC/60Hz Battery

CONFIGURATIONS INVESTIGATED

NUAH0001 - 1 NUAH0004 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 26500 MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT (2-JUL-2019)

Description	Manufacturer	Model	ID	Last Cal.	Interval
Amplifier - Pre-Amplifier	L-3 Narda-MITEQ	AMF-6F-12001800-30-10P	PAP	23-Feb-2019	12 mo
Antenna	ETS-Lindgren	3160-08	AJP	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	23-Feb-2019	12 mo
Cable	Element	Standard Gain Cable	MNW	23-Feb-2019	12 mo
Antenna	ETS-Lindgren	3160-07	AJJ	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	23-Feb-2019	12 mo
Cable	Element	Double Ridge Guide Horn Cables	MNV	23-Feb-2019	12 mo
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	27-Jul-2018	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIB	27-Aug-2018	24 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HGG	17-Sep-2019	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HFM	18-Sep-2019	12 mo
Attenuator	Coaxicom	3910-20	AXY	17-Sep-2019	12 mo

TEST EQUIPMENT (19-NOV-2019)

Description	Manufacturer	Model	ID	Last Cal.	Interval
Filter - High Pass	Micro-Tronics	HPM50111	LFN	12-Sep-2019	12 mo
Attenuator	Fairview Microwave	SA18E-20	TWZ	17-Sep-2019	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVT	8-Feb-2019	12 mo
Cable	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	17-Sep-2019	12 mo
Antenna - Double Ridge	ETS-Lindgren	3115	AJQ	16-Jan-2019	24 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A (EXA)	AFQ	13-Dec-2018	12 mo



PSA-ESCI 2019.05.10

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector PK = Peak Detector AV = RMS Detector

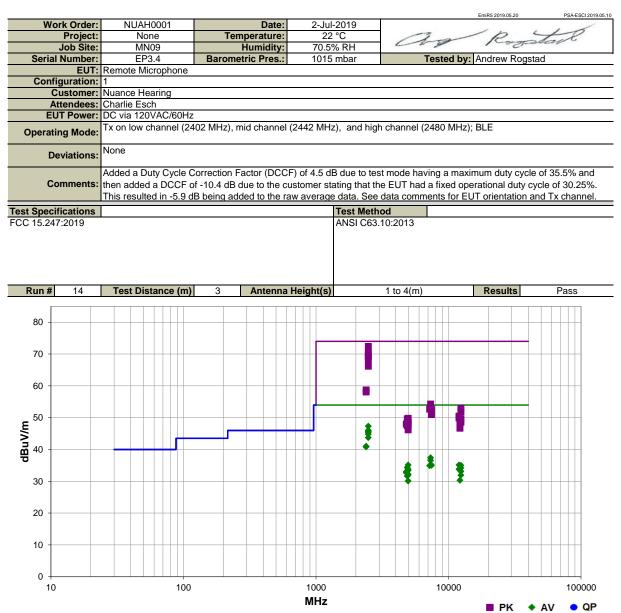
Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of 10*LOG(dc).





Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.580	56.5	-4.1	3.0	89.0		20.0	Horz	PK	0.0	72.4	74.0	-1.6	EUT on side, High ch., BLE
2483.513	54.5	-4.1	4.0	79.0		20.0	Horz	PK	0.0	70.4	74.0	-3.6	EUT horz, High ch., BLE
2483.517	54.0	-4.1	1.3	289.0		20.0	Vert	PK	0.0	69.9	74.0	-4.1	EUT vert, High ch., BLE
2483.707	53.2	-4.1	4.0	290.0		20.0	Horz	PK	0.0	69.1	74.0	-4.9	EUT vert, High ch., BLE
2483.517	52.2	-4.1	3.8	51.0		20.0	Vert	PK	0.0	68.1	74.0	-5.9	EUT horz, High ch., BLE
2483.510	37.3	-4.1	3.0	89.0	-5.9	20.0	Horz	AV	0.0	47.3	54.0	-6.7	EUT on side, High ch., BLE
2483.527	50.3	-4.1	1.5	148.0		20.0	Vert	PK	0.0	66.2	74.0	-7.8	EUT on side, High ch., BLE
2483.500	36.0	-4.1	4.0	79.0	-5.9	20.0	Horz	AV	0.0	46.0	54.0	-8.0	EUT horz, High ch., BLE
2483.540	35.8	-4.1	4.0	290.0	-5.9	20.0	Horz	AV	0.0	45.8	54.0	-8.2	EUT vert, High ch., BLE
2483.500	35.7	-4.1	1.3	289.0	-5.9	20.0	Vert	AV	0.0	45.7	54.0	-8.3	EUT vert, High ch., BLE
2483.510	35.4	-4.1	3.7	134.0	-5.9	20.0	Vert	AV	0.0	45.4	54.0	-8.6	EUT horz, High ch., BLE 2
2483.513	34.8	-4.1	3.8	51.0	-5.9	20.0	Vert	AV	0.0	44.8	54.0	-9.2	EUT horz, High ch., BLE
2483.507	33.7	-4.1	1.5	148.0	-5.9	20.0	Vert	AV	0.0	43.7	54.0	-10.3	EUT on side, High ch., BLE
2389.007	31.1	-4.2	1.5	96.0	-5.9	20.0	Vert	AV	0.0	41.0	54.0	-13.0	EUT vert, Low ch., BLE
2388.310	30.9	-4.2	1.5	225.0	-5.9	20.0	Horz	AV	0.0	40.8	54.0	-13.2	EUT on side, Low ch., BLE
2388.713	42.9	-4.2	1.5	96.0		20.0	Vert	PK	0.0	58.7	74.0	-15.3	EUT vert, Low ch., BLE
2389.330	42.3	-4.2	1.5	225.0		20.0	Horz	PK	0.0	58.1	74.0	-15.9	EUT on side, Low ch., BLE
7325.392	30.6	12.7	1.5	272.0	-5.9	0.0	Horz	AV	0.0	37.4	54.0	-16.6	EUT on side, Mid ch., BLE
7325.375	29.8	12.7	1.5	69.0	-5.9	0.0	Vert	AV	0.0	36.6	54.0	-17.4	EUT horz, Mid ch., BLE
12008.680	42.2	-1.2	1.3	20.0	-5.9	0.0	Horz	AV	0.0	35.1	54.0	-18.9	EUT on side, Low ch., BLE

					Duty Cycle		Polarity/		2.1				
Freq	Amplitude	Factor	Antenna Height	Azimuth	Correction Factor	External Attenuation	Transducer Type	Detector	Distance Adjustment	Adjusted	Spec. Limit	Compared to Spec.	
(MHz)	(dBuV)	(dB)	(meters)	(degrees)	(meters)	(dB)	Type	Delector	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
((· · · · · ,	(,			,	Comments
4959.758	37.2	3.8	2.3	50.0	-5.9	0.0	Horz	AV	0.0	35.1	54.0	-18.9	EUT on side, High ch., BLE
7439.392	28.2	12.8	1.5	315.0	-5.9	0.0	Vert	AV	0.0	35.1	54.0	-18.9	EUT horz, High ch., BLE
7437.625	28.1	12.8	1.5	297.0	-5.9	0.0	Horz	AV	0.0	35.0	54.0	-19.0	EUT on side, High ch., BLE
12400.960	28.5	12.4	2.0	11.0	-5.9	0.0	Horz	AV	0.0	35.0	54.0	-19.0	EUT on side, High ch., BLE
7205.308	28.5	12.3	1.5	246.0	-5.9	0.0	Vert	AV	0.0	34.9	54.0	-19.1	EUT horz, Low ch., BLE
4883.817	36.7	3.5	2.1	314.0	-5.9	0.0	Horz	AV	0.0	34.3	54.0	-19.7	EUT on side, Mid ch., BLE
7326.533	41.6	12.7	1.5	272.0		0.0	Horz	PK	0.0	54.3	74.0	-19.7	EUT on side, Mid ch., BLE
12400.950	27.7	12.4	2.4	17.0	-5.9	0.0	Vert	AV	0.0	34.2	54.0	-19.8	EUT horz, High ch., BLE
12008.710	40.9	-1.2	1.0	47.0	-5.9	0.0	Vert	AV	0.0	33.8	54.0	-20.2	EUT horz, Low ch., BLE
4959.925	35.8	3.8	1.0	153.0	-5.9	0.0	Vert	AV	0.0	33.7	54.0	-20.3	EUT horz, High ch., BLE
12208.670	39.8	-0.4	1.8	13.0	-5.9	0.0	Horz	AV	0.0	33.5	54.0	-20.5	EUT on side, Mid ch., BLE
4959.817	35.5	3.8	2.3	154.0	-5.9	0.0	Horz	AV	0.0	33.4	54.0	-20.6	EUT vert, High ch., BLE
12398.720	39.2	-0.2	1.8	8.0	-5.9	0.0	Horz	AV	0.0	33.1	54.0	-20.9	EUT on side, High ch., BLE
4803.858	35.4	3.5	2.3	341.0	-5.9	0.0	Horz	AV	0.0	33.0	54.0	-21.0	EUT on side, Low ch., BLE
12401.350	40.6	12.4	2.0	11.0		0.0	Horz	PK	0.0	53.0	74.0	-21.0	EUT on side, High ch., BLE
7326.792	40.2	12.7	1.5	69.0		0.0	Vert	PK	0.0	52.9	74.0	-21.1	EUT horz, Mid ch., BLE
4803.925	35.1	3.5	1.6	183.0	-5.9	0.0	Vert	AV	0.0	32.7	54.0	-21.3	EUT horz, Low ch., BLE
7208.067	40.4	12.3	1.5	246.0		0.0	Vert	PK	0.0	52.7	74.0	-21.3	EUT horz, Low ch., BLE
7438.100	39.8	12.8	1.5	315.0		0.0	Vert	PK	0.0	52.6	74.0	-21.4	EUT horz, High ch., BLE
4959.825	34.3	3.8	1.6	270.0	-5.9	0.0	Vert	AV	0.0	32.2	54.0	-21.8	EUT vert, High ch., BLE
4959.858	34.1	3.8	1.5	127.0	-5.9	0.0	Vert	AV	0.0	32.0	54.0	-22.0	EUT on side, High ch., BLE
12398.640	38.0	-0.2	1.0	61.0	-5.9	0.0	Vert	AV	0.0	31.9	54.0	-22.1	EUT horz, High ch., BLE
12400.860	39.3	12.4	2.4	17.0		0.0	Vert	PK	0.0	51.7	74.0	-22.3	EUT horz, High ch., BLE
4883.900	34.0	3.5	1.5	192.0	-5.9	0.0	Vert	AV	0.0	31.6	54.0	-22.4	EUT horz, Mid ch., BLE
7439.767	38.2	12.8	1.5	297.0		0.0	Horz	PK	0.0	51.0	74.0	-23.0	EUT on side, High ch., BLE
12008.480	51.7	-1.2	1.3	20.0		0.0	Horz	PK	0.0	50.5	74.0	-23.5	EUT on side, Low ch., BLE
12208.710	36.6	-0.4	2.4	137.0	-5.9	0.0	Vert	AV	0.0	30.3	54.0	-23.7	EUT horz, Mid ch., BLE
4959.800	32.2	3.8	1.1	152.0	-5.9	0.0	Horz	AV	0.0	30.1	54.0	-23.9	EUT horz, High ch., BLE
12011.230	51.1	-1.2	1.0	47.0		0.0	Vert	PK	0.0	49.9	74.0	-24.1	EUT horz, Low ch., BLE
4959.358	46.0	3.8	2.3	50.0		0.0	Horz	PK	0.0	49.8	74.0	-24.2	EUT on side, High ch., BLE
4884.375	46.1	3.5	2.1	314.0		0.0	Horz	PK	0.0	49.6	74.0	-24.4	EUT on side, Mid ch., BLE
12399.610	49.7	-0.2	1.8	8.0		0.0	Horz	PK	0.0	49.5	74.0	-24.5	EUT on side, High ch., BLE
4959.358	45.4	3.8	2.3	154.0		0.0	Horz	PK	0.0	49.2	74.0	-24.8	EUT vert, High ch., BLE
12399.780	48.8	-0.2	1.0	61.0		0.0	Vert	PK	0.0	48.6	74.0	-25.4	EUT horz, High ch., BLE
12211.000	49.0	-0.4	1.8	13.0		0.0	Horz	PK	0.0	48.6	74.0	-25.4	EUT on side, Mid ch., BLE
4960.617	44.7	3.8	1.0	153.0		0.0	Vert	PK	0.0	48.5	74.0	-25.5	EUT horz, High ch., BLE
4803.633	44.5	3.5	1.6	183.0		0.0	Vert	PK	0.0	48.0	74.0	-26.0	EUT horz, Low ch., BLE
4803.317	44.5	3.5	2.3	341.0		0.0	Horz	PK	0.0	48.0	74.0	-26.0	EUT on side, Low ch., BLE
4959.800	44.1	3.8	1.6	270.0		0.0	Vert	PK	0.0	47.9	74.0	-26.1	EUT vert, High ch., BLE
4960.358	43.8	3.8	1.5	127.0		0.0	Vert	PK	0.0	47.6	74.0	-26.4	EUT on side, High ch., BLE
4883.675	44.0	3.5	1.5	192.0		0.0	Vert	PK	0.0	47.5	74.0	-26.5	EUT horz, Mid ch., BLE
12208.700	47.1	-0.4	2.4	137.0		0.0	Vert	PK	0.0	46.7	74.0	-27.3	EUT horz, Mid ch., BLE
4960.500	42.4	3.8	1.1	152.0		0.0	Horz	PK	0.0	46.2	74.0	-27.8	EUT horz, High ch., BLE



Proj Job S Serial Num		None		perature:	22.6	°C	Ti	-1: 2	/	20			
Serial Num	Sito.							since	MAR	- CA			
	me.	MN05		Humidity:	31.9%	RH			3/-20				
	ber:	1938AE20010	Baromet	ric Pres.:	1012 r	nbar	Tes	sted by: Dustin S	parks				
E	UT: R	Remote Microphone											
Configurat													
Custor	ner: N	luance Hearing											
Attende	es: J	ohn Quach											
EUT Pov	wer: B	Battery											
Operating Mo	ode:	ransmitting PAS (2 I	Mbps) - mid (channel (244	42 MHz) ar	nd high ch	annel (2476 M	Hz) modulated					
Deviatio	ons:	None											
Comme	nts: fo	Outy cycle correction ormula DCCF = 10 * OCCF of -10.4 was a	log(1/0.179)	. Manufactu	rer declare	d that the	maximum ope	rating duty cycle					
st Specification	ons				1	Fest Meth	od						
Run # 1		Test Distance (m)	3	Antenna H	leight(s)		1 to 4(m)	Resul	ts	Pass			
80													
70										++++			
60										++++			
50													
						•							
40		┝━┿┿┿┿╇┩					 						
30	_									++++			
~													
20													
10													
0													
		100			1000		1	0000		100000			
10													
10					MHz			Pł	< 🔹 🔺 A	V 😐 QP			

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Duty Cycle Correction Factor (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2485.108	33.4	-3.8	1.5	136.0	-2.9	20.0	Horz	AV	0.0	46.7	54.0	-7.3	EUT on side, High ch., PAS
2483.542	46.8	-3.8	1.5	136.0	0.0	20.0	Horz	PK	0.0	63.0	74.0	-11.0	EUT on side, High ch., PAS
7325.242	30.6	13.5	1.5	348.9	-2.9	0.0	Horz	AV	0.0	41.2	54.0	-12.8	EUT on side, Mid ch., PAS
7324.742	42.3	13.5	1.5	348.9	0.0	0.0	Horz	PK	0.0	55.8	74.0	-18.2	EUT on side, Mid ch., PAS