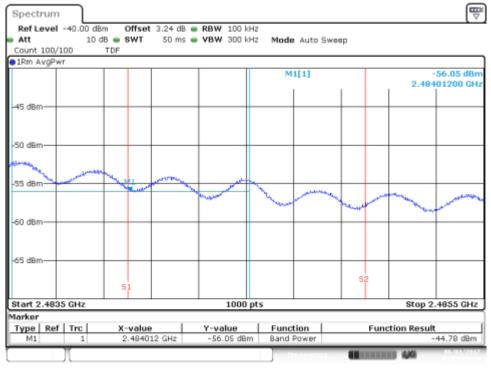


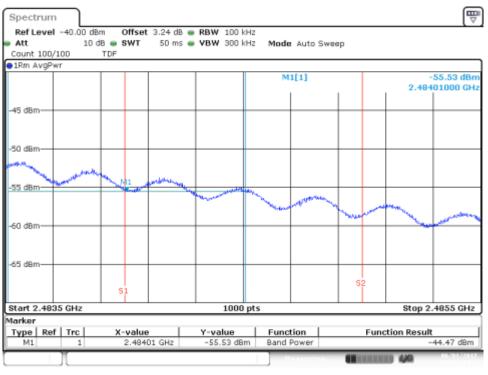
Test Report Nº 170524-02.TR04

Channel 12 - BE High Freq Section RMS within 2MHz (restricted)



Date: 1.JUN2017 13:08:37

Channel 13 - BE High Freq Section RMS within 2MHz (restricted)

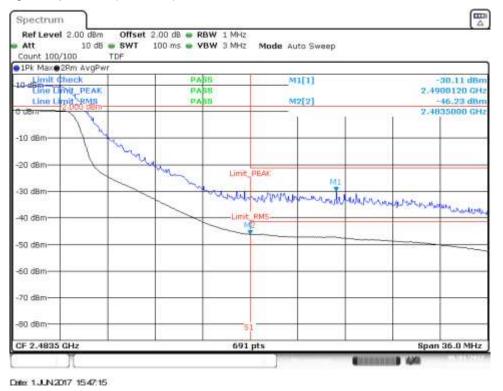


Date: 1.JUN2017 13:17:29

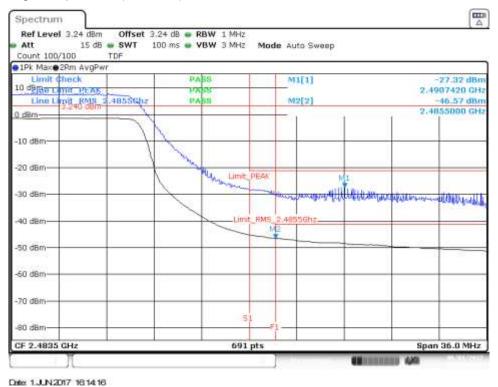


MIMO-A, 802.11n40, HT8

Channel 9F - BE High Freq Section (restricted)



Channel 10F - BE High Freq Section (restricted)





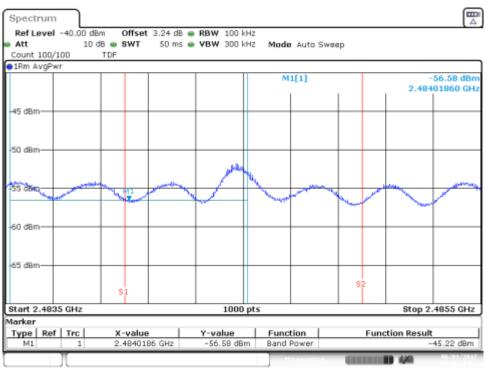
Test Report Nº 170524-02.TR04

Channel 11F - BE High Freq Section (restricted)

1Pk Maxe2Rm AvgPwr			
Limit Check	PABS	M1[1]	-24.21 dB
D deme Line Line Line Line Line Line Line Lin	PABS	M2[2]	2.4836040 GF -48.03 dB
Line Limit RMS 2.4855Ghz		matal	2.4855000 GF
dR/m		1.000	2
0 d8m	1		
0.0011			
20 dBm	11		
	Limit	EAK	
30 dBm		24	
		Marsham alan	Hull man man wat for some min
10 d8m	Lim	t RM5_2.4855Ghz	
		M2	
10 d8m		-	
(20140)			
50 d8m			
70 dBm			
		51	

Date: 1.JUN2017 180435

Channel 9F - BE High Freq Section RMS within 2MHz (restricted)

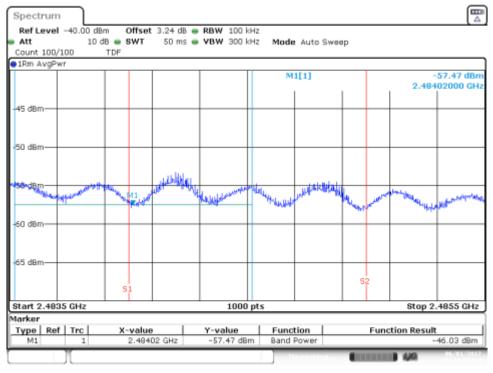


Date: 1.JUN2017 15.4631



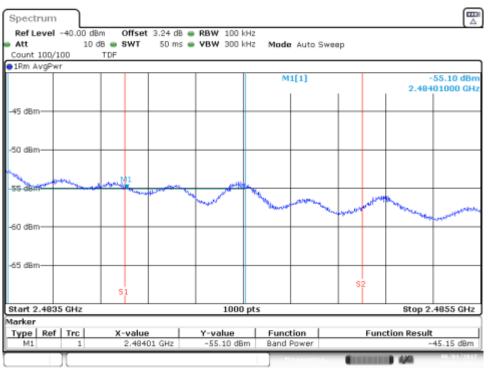
Test Report Nº 170524-02.TR04

Channel 10F - BE High Freq Section RMS within 2MHz (restricted)



Date: 1.JUN2017 16:13:38

Channel 11F - BE High Freq Section RMS within 2MHz (restricted)

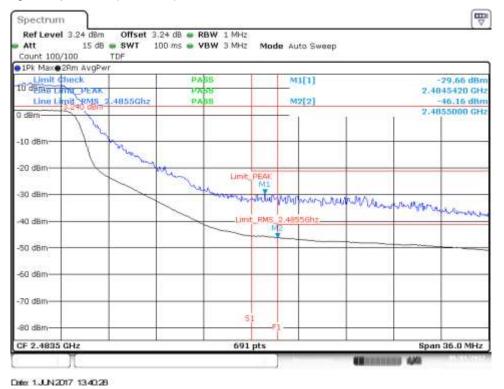


Date: 1.JUN2017 16:08:45



MIMO-B, 802.11n40, HT8

Channel 9F - BE High Freq Section (restricted)



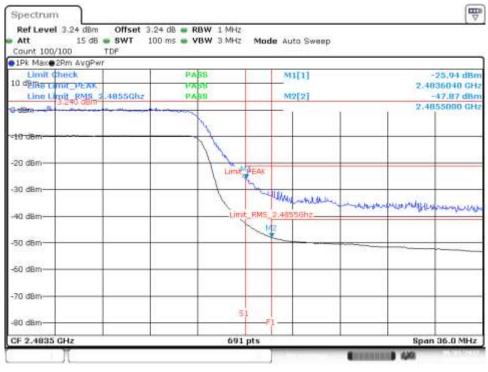
Channel 10F - BE High Freq Section (restricted)

-Spectrum Ref Level 3.24 dBm Offset 3.24 dB - RBW 1 MHz Att 15 d8 🖷 SWT 100 ms 💿 VBW 3 MHz Mode Auto Sweep Count 100/100 TDF 1Pk Maxe2Rm AvgPwi Limit Check PABS M1[1] -29.98 dBn 10 dansa Lana PLAK WA. 2.4835520 GHz 48556hz PA M2[2] -47.34 dBn Line Limit RMS 2.4855000 GH 0 dBm -10 dBm -20 dBm-4011 fran Limit PEAN 30 dBm and participation of the first for a second state of the same 1 RME 40 dBm Linnat -50 dBm--60 d8m 70 dBm S 80 dBm-691 pts CF 2.4835 GHz Span 36.0 MHz Date: 1.JUN2017 1349:25



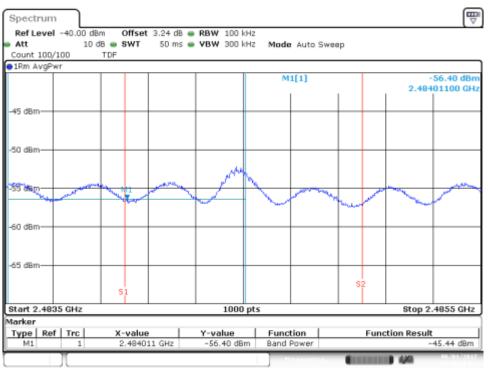
Test Report Nº 170524-02.TR04

Channel 11F - BE High Freq Section (restricted)



Date: 1.JUN2017 135821

Channel 9F - BE High Freq Section RMS within 2MHz (restricted)

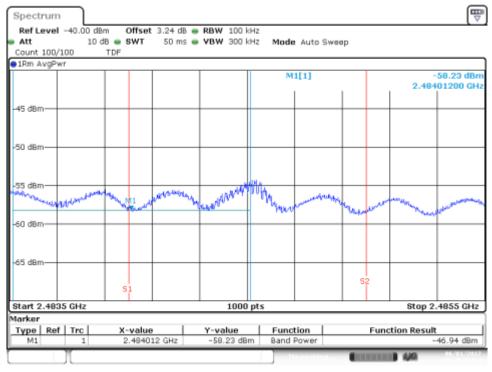


Date: 1.JUN2017 13:39:50



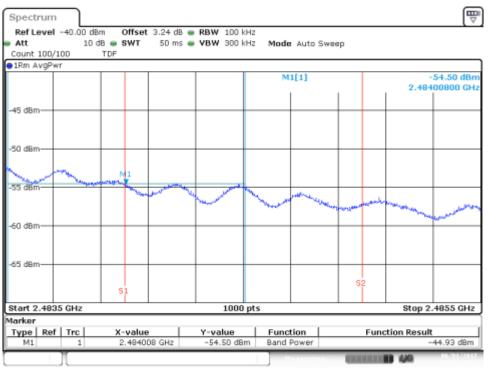
Test Report Nº 170524-02.TR04

Channel 10F - BE High Freq Section RMS within 2MHz (restricted)



Date: 1.JUN2017 134845

Channel 11F - BE High Freq Section RMS within 2MHz (restricted)

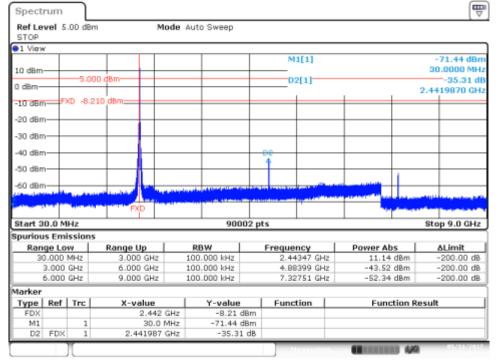


Date: 1.JUN2017 135544

B.3.7 Out of band emissions – Spurious

SISO-A, 802.11b, 1Mbps

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 31.MAY.2017 15:32:07

Channel 7 - Spurious 2 Delta Marker Measurement

STOP	evel 5	.00 dBm	M	ode A	uto Sweep						
1 Viev	ĸ										
							M	1[1]		9	-72.46 dB
LO dBm			dBm				D	2[1]			-54.21
) d8m-		3.500	dbiii			+				14	.1834960 G
10 dBr		KD -8.21	0 dBm		_						
	·										
20 dBr	n					+			-		
30 dBr											
40 dBr	n					+					
50 dBr	n					-					_
			1 1							02	
60 dBr	"				- Hanna a			والمراجعين أربعوا	A DESCRIPTION OF A DESC	an an article	
FXD								terre a subsection de literat		d. Ministration	In proceeding street, or other
).0 GH				000						10.0.0
					900	02 pts	•			5	top 18.0 GH
	us Emi Ige Lo	issions	Range Up		RBW		reque	nev l	Power Ab	ые I	∆Limit
	9.000		12.000 GHz		00.000 kHz			5795 GHz	-60.13		-200.00 d
Ran		GHz	15.000 GHz		00.000 kHz			5196 GHz	-63.12		-200.00 d
Ran	2.000	GHz	18.000 GHz	1	00.000 kHz		16.62	2550 GHz	-62.42	dBm	-200.00 d
Ran	5.000										
Ran 1	5.000					1	Fund	tion	Fund	tion Res	ult
Ran 1 1 arker	5.000	Trc	X-value	1	Y-value						
Ran 1 1 larker	.5.000 Ref	Trc	X-value 2.442	GHz	-8.21 d	Bm					
Ran 1 larker Type FDX M1	.5.000 Ref	1 1		GHz	1 1010-0	iBm					

Date: 31.MAY.2017 15:32:27





Channel 7 - Spurious 3 Delta Marker Measurement

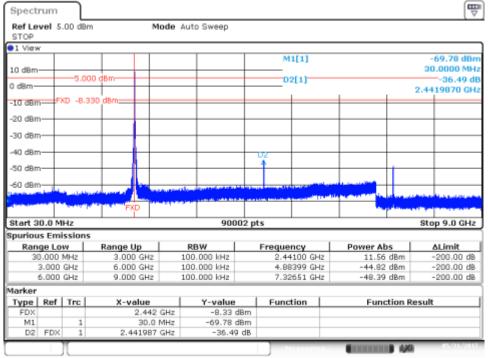
Ref Le STOP	vel 5	.00 dē	Im	Ν	1ode	Auto Sweep						
1 View	e i i i											
			-				-	M	1[1]			-67.46 dB
10 dBm	\rightarrow		-				+				16	3.0000000 GH
		5.0	100 dB	m			+	D;	2[1]			-53.43 0
0 d8m-									1	1	1 22	2.0981070 GH
-10 dBr	n Fi	ХD -В.	210 d	Bm		_	+					_
-20 dBr	_											
-30 dBr	∩+-		-				+					_
-40 dBr	-		_				_					
										1		
-50 dBr							+					
-60 dBr	n+-					-	_			<u>ne</u>		
a se de s	- In In	and a start of the	shu tik		maadm	it and the second second			Service Sciences			
-FXD	- T				Territoria de la competition de la comp		1		and a particular sector.			
Start 1	8.0 G	Hz				900	02 pt	s			Ę	Stop 26.5 GHz
spuriou	ıs Emi	ission	5									
Ran	ge Lo	w	R	ange Up	1	RBW		Freque		Power At	us	ΔLimit
	8.000			21.00D GHz	_	100.000 kHz			635 GHz	-62.37		-200.00 dB
	1.000			24.000 GHz		100.000 kHz			006 GHz	-61.97		-200.00 dB
2	4.000	GHz		26.500 GHz		100.000 kHz		26.08	3197 GHz	-61.56	dBm	-200.00 dB
Marker												
Type	Ref	Trc		X-value		Y-value		Fund	tion	Fund	tion Re	sult
FDX				2.442		-8.21						
M1		1			GHz	-67.46						
D2	FDX	1		22.098107	GHZ	-53,43	dB					

Date: 31.MAY.2017 15:32:47



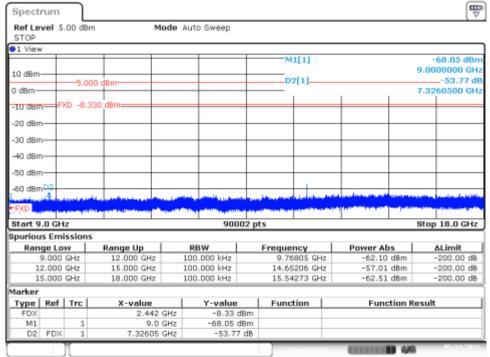
SISO-B, 802.11b, 1Mbps

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 31.MAY.2017 10.18.31

Channel 7 - Spurious 2 Delta Marker Measurement



Date: 31.MAY.2017 10:18:56



Channel 7 - Spurious 3 Delta Marker Measurement

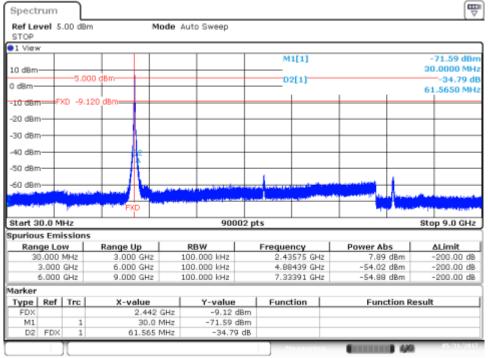
Ref Le STOP	vel 5	.00 dB	m	Mode	Auto Sweep					
1 Viev	۲. –						11[1]			-67.94 dB
						N N	111		16	-67.94 aB 1.0000000 GF
10 dBm			00 dBm			0	2[1]			-53.61 d
0 d8m-		0.0							19	.7940090 GH
-10 dBn	E)	XD -8.3	330 dBm		_					
-20 dBn	n-+-			<u> </u>						
-30 dBn	n		_		_				<u> </u>	
-40 dBn										
-40 080	-									
-50 dBr	n-+-			<u> </u>		<u> </u>	<u> </u>			
-60 dBr	n —		_	L		2	-	-		_
Mail 4 48. 0	in an an	ست الحس	and a second second large	and a second	and the second second	fa in die der der der	i kating photosisi ng	Addison and distant	an a littler	in al ditta data
-FXD					14		A location of the last	1		
Start 1	8.0 G	Hz			9000	2 pts			S	top 26.5 GHz
Spuriou	ıs Emi	ission	s							
Ran	ge Lo	w	Range Up		RBW	Freque	ency	Power At	is	ΔLimit
	8.000		21.00D GH		100.000 kHz		8265 GHz	-62.68		-200.00 dB
	1.000		24.000 GH		100.000 kHz		3601 GHz	-61.94		-200.00 dB
2	4.000	GHz	26.500 GH	iz	100.000 kHz	25.7	5365 GHz	-61.91	dBm	-200.00 dB
Marker										
Туре	Ref	Trc	X-value	-	Y-value		tion	Fund	tion Re:	sult
FDX				42 GHz	-8.33 dB					
M1	FDX	1	18 19.7940	.D GHz	-67.94 dB					
					-53.61	- 12 I				

Date: 31.MAY.2017 10:19:21



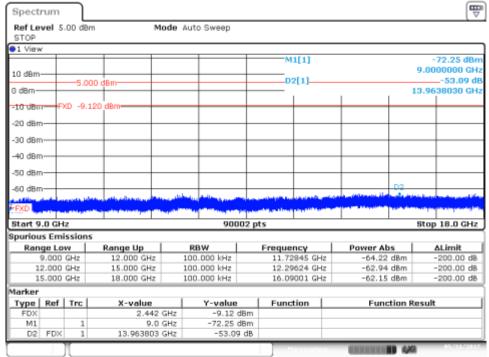
SISO-A, 802.11g, 6Mbps

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 31.MAY.2017 16:24:35

Channel 7 - Spurious 2 Delta Marker Measurement



Date: 31.MAY.2017 16:24:56



Channel 7 - Spurious 3 Delta Marker Measurement

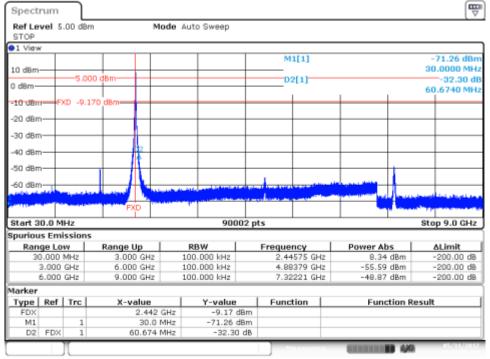
Spectrum									6
Ref Level 5. STOP	00 dBm	Mod	de Auto Sweep						
1 View									
				-	M	1[1]			-67.25 dt
						444		11	3.0000000 G
10 dBm	-5.000	40.00				2[1]		-	-52.49
0 d8m	-5.000	dBm						1	7.7638500 G
						1	1	1	1
-10 dBm FX	D -9.12	0 dBm		-					_
20 dBm									
20 0011									
-30 dBm —		+		-					_
-40 dBm									
40 0Bm									
-50 dBm				+				<u> </u>	_
		02							
-60 dBm	and the last state	and the state of the	ALL ALL AND ALL	والمتح وعالماته	d den et	ويعويلها فليروي	والسدور والتأثير	duranting	وحفت ويطخلو رقيع
FXD	Brown and	out of the second s		-			And the second second	-	
									`
Start 18.0 GF	łz		900	02 pts					Stop 26.5 GH
purious Emi	ssions								
Range Lov	N	Range Up	RBW	F	reque	ncy	Power Ab)S	ΔLimit
18.000	GHz	21.000 GHz	100.000 kHz		20.20	585 GHz	-61.61	dBm	-200.00 d
21.000	GHz	24.000 GHz	100.000 kHz		22.05	181 GHz	-62.04	dBm	-200.00 d
24.000	GHz	26.500 GHz	100.000 kHz		25.77	165 GHz	-61.46	dBm	-200.00 d
1arker									
Type Ref	Trc	X-value	Y-value	1	Func	tion	Fund	tion Re	sult
FDX		2.442 G	Hz -9.12 d	iBm					
M1	1	18.0 G	Hz -67.25 c	iBm					
D2 FDX	1	17.76385 G	Hz -52.49	dB					
	<u> </u>			-	_	_	B ERRY AND	1 4/0	05/31/20

Date: 31.MAY.2017 16:25:16



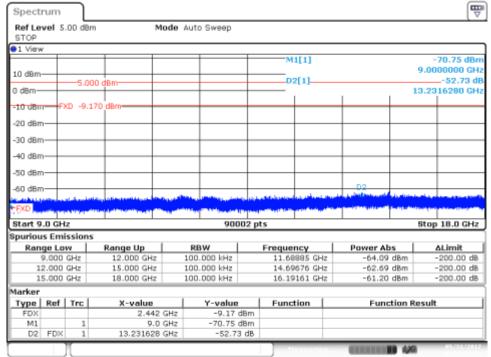
SISO-B, 802.11g, 6Mbps

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 31.MAY.2017 10:54:25

Channel 7 - Spurious 2 Delta Marker Measurement



Date: 31.MAY.2017 10.54:51



Test Report N° 170524-02.TR04

Channel 7 - Spurious 3 Delta Marker Measurement

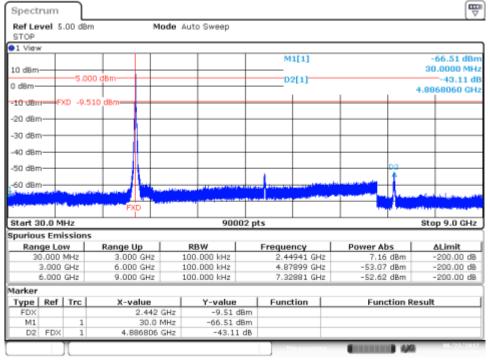
Spectru	m]										2
Ref Leve STOP	1 5.00	dBm	м	lode /	Auto Sweep							_
1 View												
-	-					-	M	1[1]			-70.86	dB
10 dBm—										10	3.000000	0 Gł
TO OBIII-		5.000 c	Bm				D	2[1]			-52.	47 d
0 d8m	+					+				22	2.690754	0 Gł
-10 dBm-	EVD	-0.170	dBro									
TO 0800-	1000	-9.170	CIDITI									
-20 dBm-						+						
-30 dBm-												
-30 dBm—												
-40 dBm-	-					+-						
-50 dBm-												
-30 GBM-												
-60 dBm—	+				-	-	and the state			<u>n2</u>		
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		1.0		a a state a s			an that are a	habit, an Elithia				
FXD	-				Date of the local date of the							
Start 18.	0 GHz		I		. 900	02 pt	s				Stop 26.5	GHz
purious	Emissi	ons										
Range			Range Up	1	RBW		Freque	ncv I	Power Al	os I	۵Limi	ŧ
	100 GH		21.000 GHz		100.000 kHz			825 GHz	-62.31	dBm	-200.0	O dB
21.0	100 GH	z	24.000 GHz		100.000 kHz		22.72	999 GHz	-62.07	dBm	-200.0	O de
24.0	100 GH	z	26.500 GHz		100.000 kHz		25.27	200 GHz	-61.57	dBm	-200.0	0 dB
larker												
	ef Tr	c I	X-value	1	Y-value	1	Fund	tion	Fund	tion Re	sult	
FDX			2.442	GHz	-9.17	dBm						
M1		1	18.0	GHz	-70.86 (dBm						
D2 F	DX	1	22.690754	GHz	-52.47	dB						
	1.11					-	-			848	05/3	1973

Date: 31.MAY.2017 10:55:17



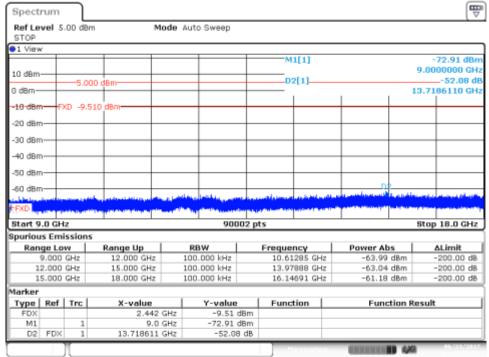
SISO-A, 802.11n20, HT0

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 23.JUN 2017 15:12:32

Channel 7 - Spurious 2 Delta Marker Measurement



Date: 23.JUN 2017 15:12:52



Channel 7 - Spurious 3 Delta Marker Measurement

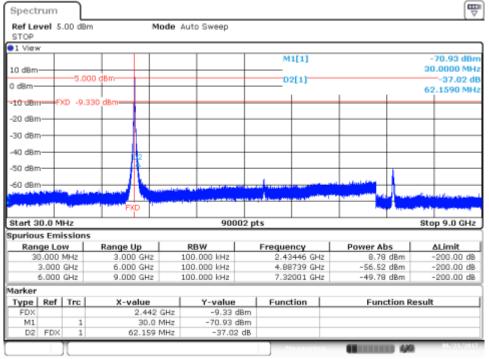
Ref Le STOP	vel 5	.00 dB	m	Mode	Auto) Sweep						
1 View	(
							+	M	1[1]			-66.78 dBr
10 dBm	\rightarrow		_	_			+				10	3.0000000 GH
		5.0	00 dBm				+	D;	2[1]			51.97 d
0 d8m-							+			1	17	7.8327500 GH
-10 dBn		XD -9.	510 dBm				+				+	_
-20 dBr												
20 dBn												
-30 dBr				_			+					
-40 dBr												
-40 080	-											
-50 dBr	n+-						+			+	+	
.so dan			D2									
-60 dBn	in the	and the second second	ALC: NOT THE OWNER	AND NAME AND	141.0	الاستربية المكانية	متبيناه	and the boline of	distant and	and the state of the state of the	a de la contra d	يعيانه متعجارينها
FXD 🗤	- 1 - T	, And the second	and the second	all press price		100	1		Contraction of the		1	
Start 1	8.0 G	Hz				9000	32 pt	s				Stop 26.5 GHz
puriou	ıs Emi	ission	5									
Ran	ge Lo	w	Range U	p	RB	w l		Freque	ncy	Power A	bs	ΔLimit
1	B.000	GHz	21.000		100.	000 kHz			475 GHz	-61.4	8 dBm	-200.00 dB
2	1.000	GHz	24.000	GHz	100.	000 kHz		21.59	9193 GHz	-61.5	8 dBm	-200.00 dB
2	4.000	GHz	26.500	GHz	100.	000 kHz		26.17	7930 GHz	-61.1	3 dBm	-200.00 dB
1arker												
Туре	Ref	Trc	X-va	ue	1	Y-value	1	Fund	tion	Fun	ction Re	sult
FDX			2	.442 GHz		-9.51 d	Bm					
M1		1		18.0 GHz		-66.78 d						
D2	FDX	1	17.8	3275 GHz		-51.97	dB					

Date: 23 JUN 2017 15:13:13



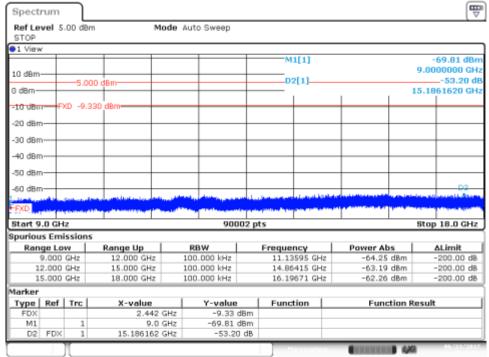
SISO-B, 802.11n20, HT0

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 23 JUN 2017 12 15 24

Channel 7 - Spurious 2 Delta Marker Measurement



Date: 23 JUN 2017 12 15 44



Test Report N° 170524-02.TR04

Channel 7 - Spurious 3 Delta Marker Measurement

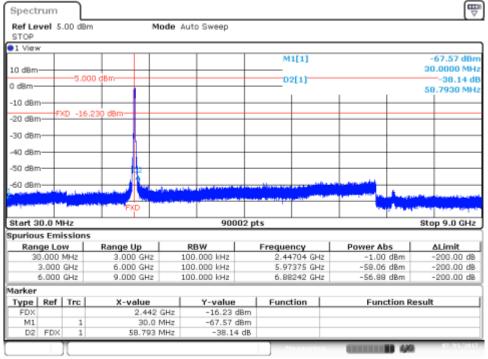
Ref Le	vel 5	.00 dB	m N	1ode A	uto Sweep				
STOP									
1 Viev	۲. –								
						M	1[1]		-69.75 dB 8.0000000 GI
10 dBm	-						2[1]		-52.30 (
0 dBm-		5.0	00 dBm				2[1]	1	9.8049080 G
							1	1 1	1
-10 dBr	r F	XD -9.3	330 dBm						
-20 dBn	n —		_		_				
-30 dBn	n								
-40 dBn	n								
-50 dBr	_								
-30 UBI	"					_			
-60 dBn	n		a second s			2 In Local Laboratory		and the second	the same and the second stand
-EXD				10.000					
1 miles									
Start 1	8.0 G	Hz			90003	2 pts			Stop 26.5 GH:
Spuriou	ıs Em	ission	5						
	ige Lo		Range Up		RBW	Freque		Power Abs	ΔLimit
	8.000		21.00D GHz		00.000 kHz		6865 GHz	-61.94 dBm	-200.00 dB
	1.000		24.000 GHz	-	00.000 kHz		4691 GHz	-61.63 dBm	-200.00 de
2	4.000	GHz	26.50D GHz	1	00.000 kHz	25.D	6876 GHz	-61.44 dBm	-200.00 dB
Marker									
Туре	Ref	Trc	X-value		Y-value	Fund	tion	Function R	esult
FDX			2.442		-9.33 dB				
M1	and the second	1		GHz	-69.75 dB				
D2	FDX	1	19.804908	GHZ	-52.30 c	B			

Date: 23 JUN 2017 12:16:05



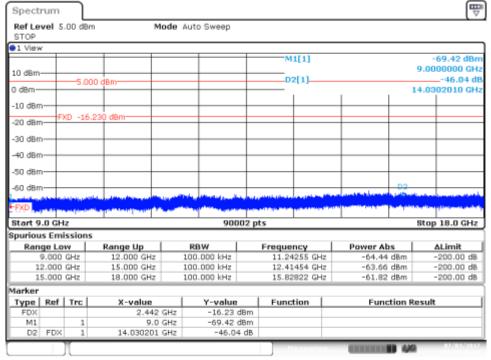
SISO-A, 802.11n40, HT0

Channel 7F - Spurious 1 Delta Marker Measurement



Date: 3JUL 2017 1338:57

Channel 7F - Spurious 2 Delta Marker Measurement



Date: 3JUL 2017 13:39:19





Channel 7F - Spurious 3 Delta Marker Measurement

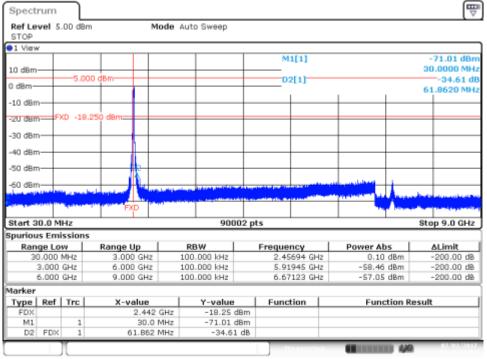
									[u
Ref Le STOP	vel 5	.00 dBm	M	lode Au	to Sweep				
1 View	<i>,</i>								
						M	1[1]		-67.94 dB
10 dBm-									18.0000000 G
		5.00	0 dBm			D	2[1]		-45.12 (
0 d8m—							1	1 1	23.2907340 G
-10 dBm									
-20 dBm	(F)	(D -16.2	230 d8m						
-20 0811	-								
-30 dBm			+ +		+				
-40 dBm									
					1				
-50 dBm	·+-								
-60 dBm					and the second				<u> </u>
1.0	i ta la	1949 B. L. L.	بيراجع الاعتبادية	hand lot a	متعمل بمناقلته فلي	- de la de la de la de la de	Barry Managers a	Children and State of Long and	and the series and the first state of the
-FXD	· · · · ·	in Discoluted	ter for the second s	and the state of the state					
Start 1	8.0 G	Hz			9000	12 pts			Stop 26.5 GH
puriou	s Emi	issions							
Ran	ge Lo	w	Range Up	L 1	RBW	Freque	ncy	Power Abs	ΔLimit
18	B.000	GHz	21.000 GHz	10	0.000 kHz	20.3	3055 GHz	-61.26 dBm	-200.00 d
	1.000		24.000 GHz		0.000 kHz		2733 GHz	-61.39 dBm	
24	4.000	GHz	26.500 GHz	10	0.000 kHz	25.73	3273 GHz	-61.35 dBm	-200.00 d
1arker									
Type	Ref	Trc	X-value		Y-value	Func	tion	Function	Result
FDX			2.442		-16.23 d				
M1		1	18.0		-67.94 d				
D2	FDX	1	23.290734	GHz	-45.12	dB			

Date: 3JUL 2017 1339.40



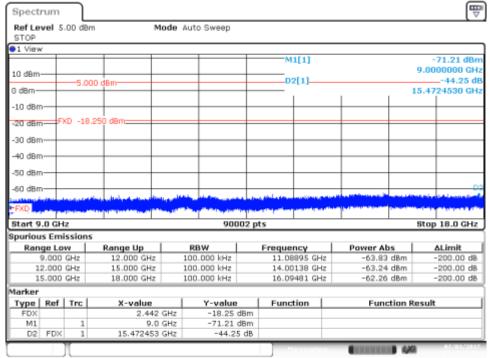
SISO-B, 802.11n40, HT0

Channel 7F - Spurious 1 Delta Marker Measurement



Date: 3JUL 2017 13:45:33

Channel 7F - Spurious 2 Delta Marker Measurement



Date: 3JUL 2017 1345:54



Channel 7F - Spurious 3 Delta Marker Measurement

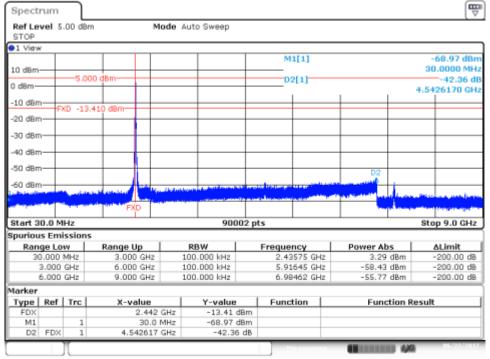
	0 dBm	Mode Au	to Sweep		2[1]		-68.78 dB 18.0000000 GP 42.98 (23.2471520 GP
							18.0000000 Gi
							18.0000000 Gi
					2[1]		-42.98 (
XD -18.	250 dBm						23.2471520 Gi
XD -18.	250 dBm						
XD -18.	250 dBm						
xD -18.	250 dem						
den bed -							
والمتحقي							
- interior							
						1 1	
						1 1	-
	The second se			a subset for		and the second s	alars a financial alar
		Collected States					
		- Constanting					
Hz			9000	2 pts			Stop 26.5 GH
issions							
we	Range Up	F	BW	Freque	ency	Power Abs	ΔLimit
GHz	21.000 GHz	z 10	0.000 kHz	20.3	5235 GHz	-61.89 dBm	-200.00 d
						-61.21 dBm	-200.00 d
GHz	26.500 GHz	z 10	0.000 kHz	25.6	B915 GHz	-61.23 dBm	-200.00 d
Trc	X-value	1	Y-value	Fund	tion	Function R	tesult
	2.44	2 GHz	-18.25 d	3m			
1							
1	23.24715	2 GHz	-42.98	dB			
	D GHz GHz GHz GHz GHz GHz Hz Hz Hz Hz Hz Hz Hz Hz Hz	Trc X-value Trc X-value 2 2.44	Trc X-value Trc 2.442 GHz 1 18.0 GHz	Trc X-value Y-value 2.442 GHz -18.25	Trc X-value Y-value Function 1 18.0 GHz -18.25 dBm -68.78 dBm	Trc X-value Y-value Function 1 18.0 GHz -68.78 dBm -68.78 dBm	Trc X-value Y-value Function Function 1 18.0 GHz -68.78 dBm -68.78 dBm -61.23 dBm

Date: 3JUL 2017 134815



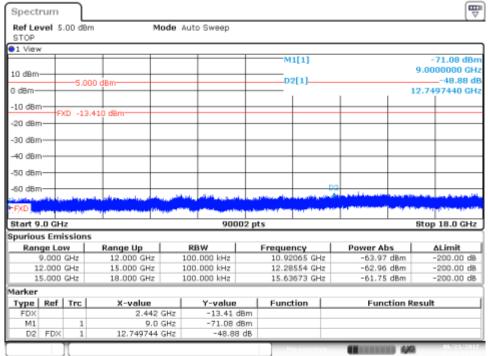
MIMO-A, 802.11n20, HT8

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 23JUN2017 16:12:11

Channel 7 - Spurious 2 Delta Marker Measurement



Date: 23 JUN 2017 16:12:32



Channel 7 - Spurious 3 Delta Marker Measurement

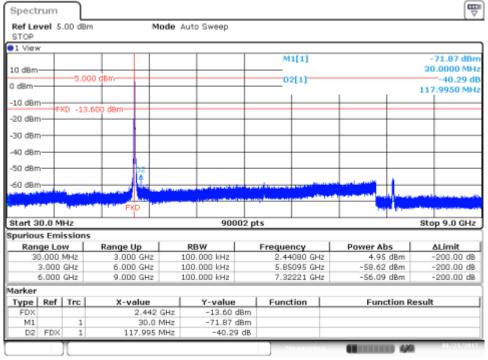
Spectrum	1								E.
Ref Level 5 STOP	.00 dBm	Me	ode Auto Sweep)					
1 View									
					M	1[1]			-67.67 dB
10 dBm								10	3.0000000 GH
10 0011	5.000) dBm			D	2[1]			-48.50 d
m8b C				\rightarrow				20	0.0555000 GH
-10 dBm									
F	XD -13.4	10 dBm					-		
-20 dBm		+		\rightarrow					
-30 dBm									
-30 dBm									
-40 dBm		+		\rightarrow					_
-50 dBm									
-60 dBm		a barra dia dia		D.	2		A share of a start on a		
100 a 100 a 100 a 100 a 100 a	وربوارز الأ	- A select of building of a	تستحصر والمعد	district sales		d data data birah	A Market and Street Street		
FXD	of the part of the	and the second se	- and the second se					1	
Start 18.0 G	Hz		. 9	0002 pt	s				Stop 26.5 GHz
purious Em	issions								-
Range Lo		Range Up	RBW	1	Freque	ncv	Power A	bs	∆Limit
18.000		21.000 GHz	100.000 kH			1065 GHz	-62.03	2 dBm	-200.00 dB
21.000	GHz	24.000 GHz	100.000 kH	z	23.42	2797 GHz	-60.88	dBm	-200.00 dB
24.000	GHz	26.500 GHz	100.000 kH	z	25.69	9149 GHz	-61.92	2 dBm	-200.00 dB
1arker									
Type Ref	Trc	X-value	Y-val	ae	Func	tion	Fun	ction Re	sult
FDX		2.442	GHz -13.4	1 dBm					
M1	1	18.0	GHz -67.6	7 dBm					
D2 FDX	1	20.0555	GHz -48	.50 dB					
	1					leasuring.		440	05/23/201

Date: 23 JUN 2017 16:12:53



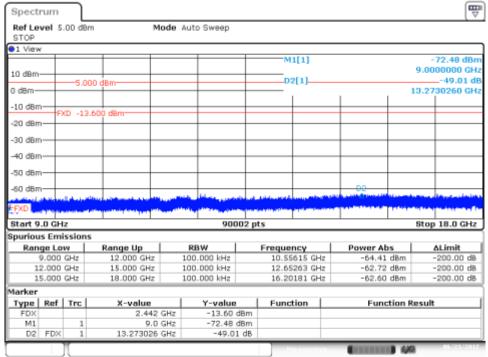
MIMO-B, 802.11n20, HT8

Channel 7 - Spurious 1 Delta Marker Measurement



Date: 23.JUN 2017 16:02:30

Channel 7 - Spurious 2 Delta Marker Measurement



Date: 23 JUN 2017 16 02 51



Channel 7 - Spurious 3 Delta Marker Measurement

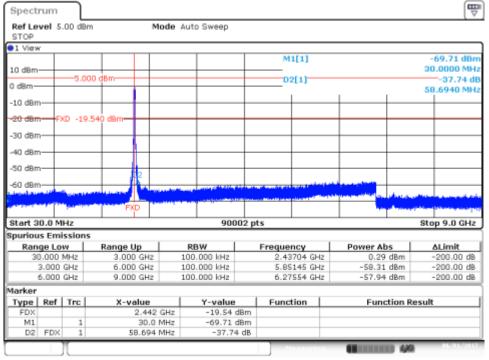
Ref Le STOP	vel 5	.00 dBn	n r	Mode A	uto Sweep					
1 View	(
							M1[1]			-69.36 dB
10 dBm	\rightarrow					<u> </u>			16	8.0000000 GI
0 d8m-		5.00	IO dBm				D2[1]			-47.54 d 9.1801290 GH
							1	1	1	1.1001290 Gr
-10 dBr		VD -12	600 d8m							
-20 dBm			obd dom		_					
-30 dBr) 									_
-40 dBrr										
-50 dBm										
-30 UBII	' _				D2					
-60 dBr	<u>+</u>		a la constante		02		de la contene	A CONTRACT OF A	a la constitución de la constitu	an a state as a bar of
-EXD			1999 1999 1999 1999 1999 1999 1999 199							
Start 1	8.0 G	Hz			9000	2 pts			5	Stop 26.5 GHz
Spuriou	is Emi	issions								
	ge Lo		Range Up		RBW		iency	Power Ab		ΔLimit
	B.000		21.000 GHz		00.000 kHz		12155 GHz	-61.69		-200.00 dB
	1.000		24.000 GHz		00.000 kHz		53173 GHz	-60.98		-200.00 dB
	4.000	GHZ	26.500 GHz	1	.00.000 kHz	24.	73027 GHz	-61.65	dBm	-200.00 dB
Marker										
Туре	Ref	Trc	X-value		Y-value		nction	Fund	tion Re	sult
FDX M1				2 GHz	-13.60 dB					
D2	FDX	1	19.180129	GHz	-69.36 dB					
02	FDA		13,100153	7 ans	-41.04	ab				

Date: 23 JUN 2017 1603:12



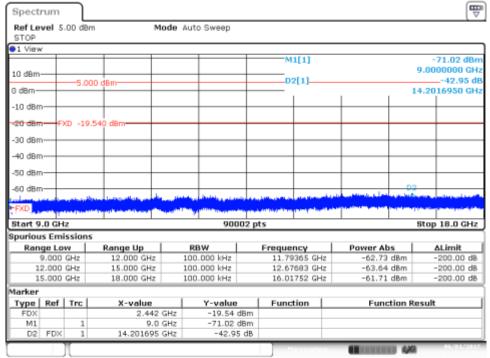
MIMO-A, 802.11n40, HT8

Channel 7F - Spurious 1 Delta Marker Measurement



Date: 1.JUN2017 153614

Channel 7F - Spurious 2 Delta Marker Measurement



Date: 1.JUN2017 153835



Channel 7F - Spurious 3 Delta Marker Measurement

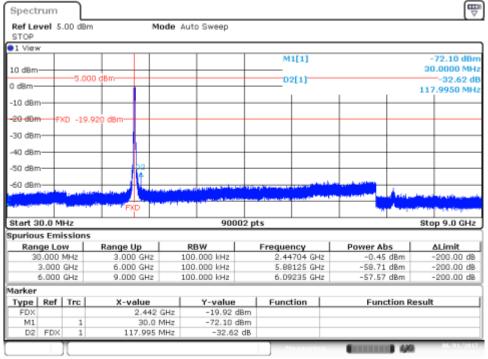
Spectrum										[
Ref Level 5 STOP	.00 dBm	i M	ode Au	to Sweep						
1 View										
				-	-	M	1[1]			-68.58 dE
10 dBm									10	3.0000000 G
	5.00	0 dBm			-	D	2[1]			-42.47
0 d8m					+				2	1.7122030 G
-10 dBm					-					_
								1		
-20 dBm F	XD -19.	540 dBm			-					
-30 dBm					-					_
10.10								1		
-40 dBm										
-50 dBm					+					
-60 dBm								02		
-SU UBIII	ب واست الله	and the second states of the	ويعطرهما ورا	أكافر مريكا فعدان	ter parties	- Charles	معلوكا فأحجا والمراجع	a state of the second	(and the	and the second second
FEXD Internation		and in the second second	- A Contractor	and the second	-		and the state of the	- Property of the second	-	and the second
Start 18.0 G				000	02 pt	-			L	Stop 26.5 GH
				900	uz pu	,				stop 26.3 GH
Spurious Em										
Range Low Range Up 18.000 GHz 21.000 GHz		21.000 GHz	RBW 100.000 kHz			20.39345 GHz		-61.86 dBm		
21.000		24.000 GHz		0.000 kHz			421 GHz	-62.10		-200.00 d
24.000		26.500 GHz		0.000 kHz			5420 GHz	-62.03		-200.00 d
Marker	101 10	201000 4112	10	0.000 1012	_	67125	TEO GITE	02107	apin	200.00 0
Type Ref	Trc	X-value	1	Y-value	1	Fund	tinn 1	E	ction Re	
FDX	IIC	2.442	GHz	-19.54 d	Bm	Func	uon	Fun	ction Re	suit
M1	1	18.0		-68.58 0						
D2 FDX	1	21.712203		-42.47						
	17					_		10.000		

Date: 1.JUN2017 15:38:57



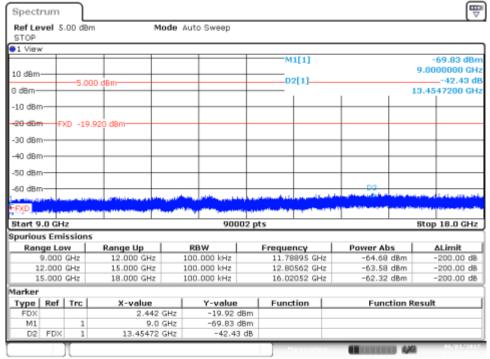
MIMO-B, 802.11n40, HT8

Channel 7F - Spurious 1 Delta Marker Measurement



Date: 1.JUN2017 13:34:24

Channel 7F - Spurious 2 Delta Marker Measurement



Date: 1.JUN2017 133445



Channel 7F - Spurious 3 Delta Marker Measurement

Ref Le STOP	vel 5	.00 d8	àm M	ode Au	to Sweep				
1 Viev	¢.								
10 dBm							11[1]	1	-68.89 dB 8.0000000 GI
) d8m-		5.0	100 dBm			D	2[1]		-41.20 (3.6202230 G
J GBIII-							1	1 I ²	3.8202230 G
-10 dBn	∩+-				+				
20 dBn	E	XD -19	9.920 d8m						
-30 dBn									_
40 dBn	n-+-				+				
50 dBr	-								
									02
-60 dBn			and and a second se		بطور بمعامر	And the second second	وريا بالمحمول أربعان	and a state of the second s	and the state of the
FXD			and the second				-	and the second sec	in the second second second
Start 18.0 GHz				90002 pts				Stop 26.5 GH	
			e		9000	z prs			stop 20.0 GH
Spurious Emissions Range Low Ra		Range Up		RBW	Freque	ncy	Power Abs	∆Limit	
	B.000		21.000 GHz				4175 GHz	-62.45 dBm	-200.00 d
		24.000 GHz	100.000 kHz		22.D	8991 GHz	-60.92 dBm	-200.00 d	
2	4.000	GHz	26.500 GHz	10	0.000 kHz	26.D	6222 GHz	-61.12 dBm	-200.00 d
1arker									
Type	Ref	Tro	X-value		Y-value	Fund	tion	Function Re	sult
FDX			2.442	GHz	-19.92 dB	3m			
M1		1	18.0		-68.89 dB				
D2	FDX	1	23.620223		-41.20				

Date: 1.JUN2017 133608



Annex C. Test Results BLE

C.1 Test Results BLE

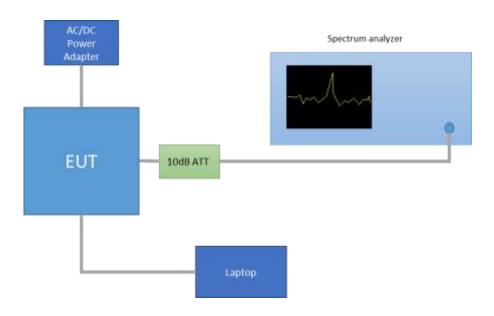
C.1.1 6dB & 99% Bandwidth

Test limits

FCC part	RSS part	Limits
15.247 (a) (2)	RSS-247 Clause 5.2 (a)	Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

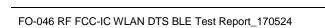
Test procedure

The setup below was used to measure the 6dB & 99% Bandwidth. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.



Results tables

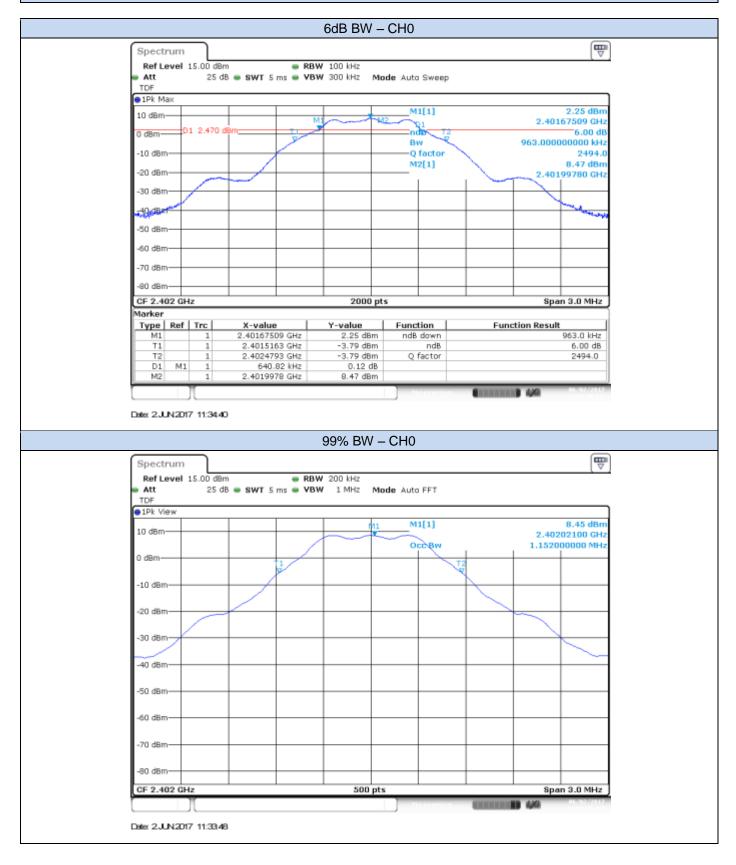
Mode	Channel	Frequency [MHz]	6dB BW [MHz]	99% BW [MHz]
	0	2402	0.64	1.15
BLE	19	2440	0.65	1.15
	39	2480	0.65	1.15



Test Report N° 170524-02.TR04

Results screenshot

BLE







Test Report Nº 170524-02.TR04





Test Report Nº 170524-02.TR04



C.1.2 Maximum Output Power and antenna gain

F

Test limits

	Limits					
FCC Part 15.247 (b) (3)	 (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following: (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. 					
RSS-247 Clause 5.4 (d)	For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e). As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode					





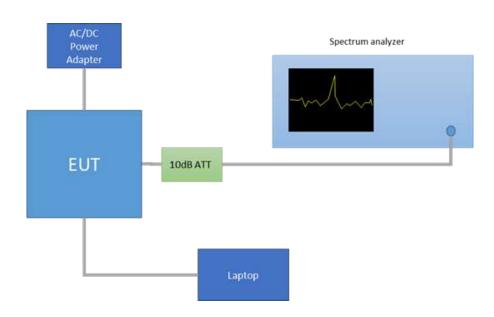
Test procedure:

The Maximum peak conducted output power was measured using the $RBW \ge DTS$ bandwidth method defined in paragraph 9.1.1 of FCC KDB 558074 D01 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

The Maximum conducted average output power was measured using the channel integration method according to Method AVGSA-2, defined in paragraph 9.2.2.4 of FCC KDB 558074 D01 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power. The declared maximum antenna gain is 3.24dBi.

The setup below was used to measure the maximum conducted output power. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.





Results tables

				Peak Power	[dBm]	
Mode	Meas. Duty Cycle [%]	СН	Frequency [MHz]	Measured Conducted Output Power	EIRP	Peak Output Power [mW]
			2402	8.68	11.92	7.38
BLE	63.2	19	2440	8.90	12.14	7.76
		39	2480	9.24	12.48	8.39

Max Value Min Value

				Average	Output Power* [dBm	1]	
Mode	Meas. Duty Cycle [%]	СН	Frequency [MHz]	Maximum Conducted Output Power	Maximum Conducted Output Power Duty cycle Compensated	EIRP	Average Output Power [mW]
		0	2402	5.89	8.58	11.82	7.21
BLE	63.2	19	2440	6.14	8.83	12.07	7.63
		39	2480	6.47	9.16	12.40	8.24

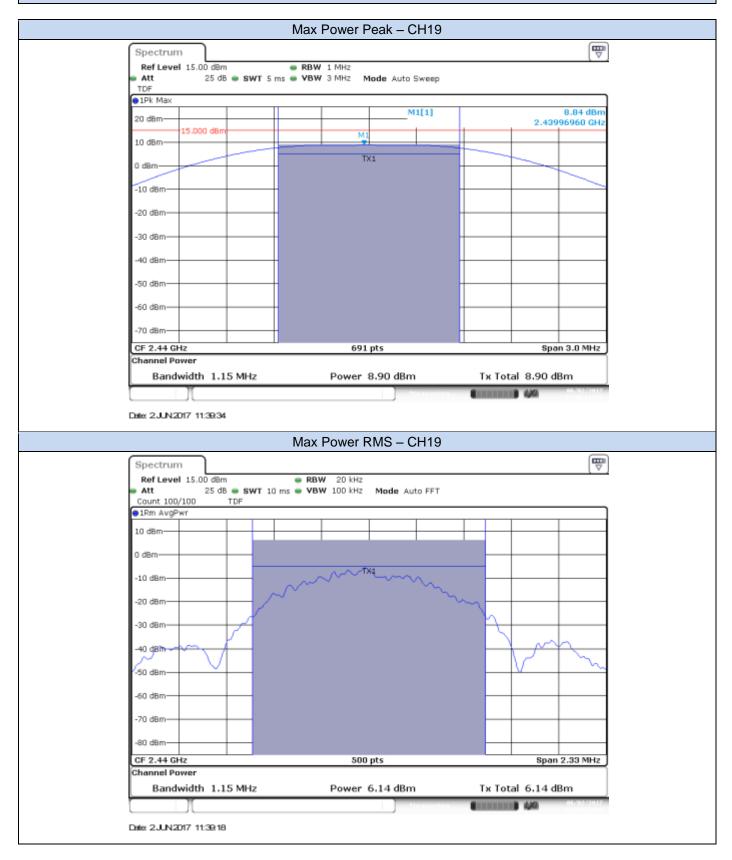
* Output Power RMS values are shown for indicative purpose only



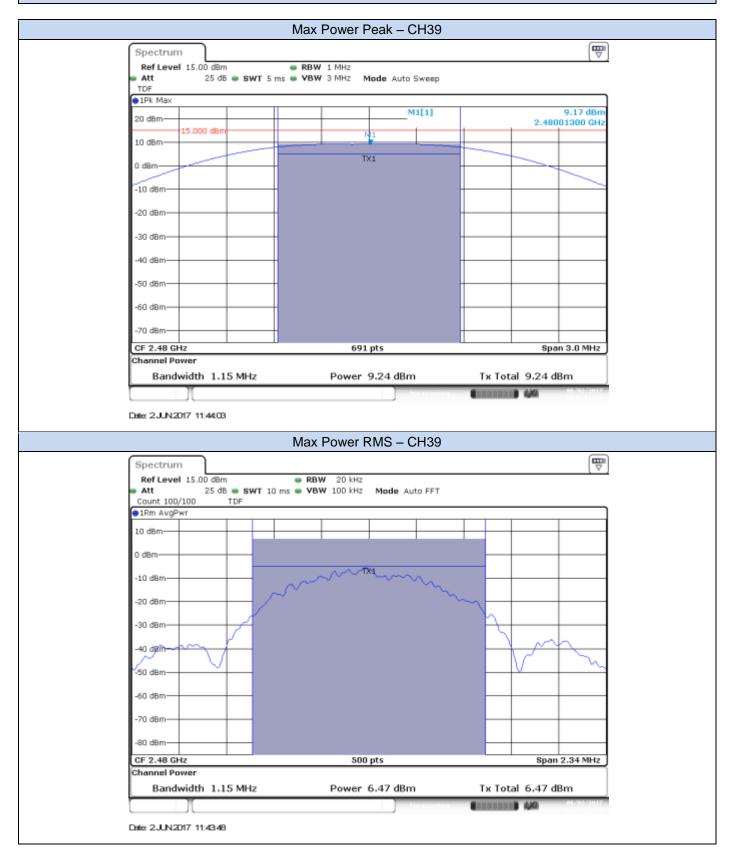
Results screenshot













C.1.3 Power Spectral Density

Test limits

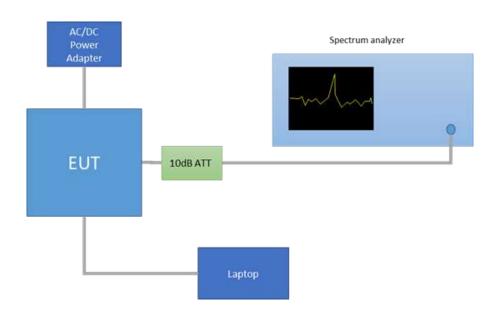
FCC part	RSS part	Limits
15.247 (e)	RSS-247 Clause 5.2 (b)	For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test procedure

The maximum peak power spectral density level of the fundamental emission was measured using the method PKPSD, defined in paragraph 10.2 of FCC KDB 558074 D01 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247.

The setup below was used to measure the power spectral density. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

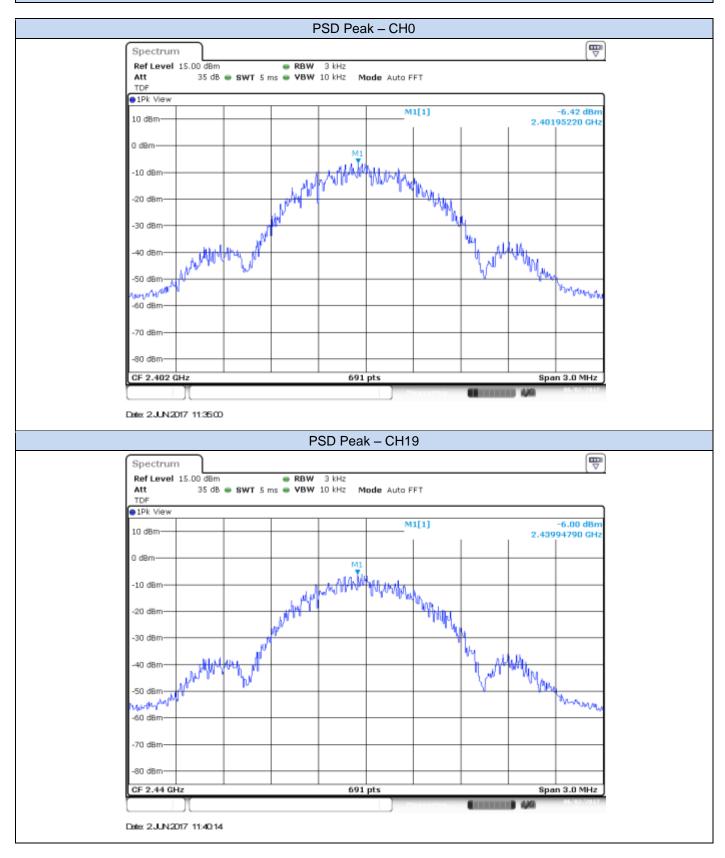
The declared maximum antenna gain is 3.24dBi.



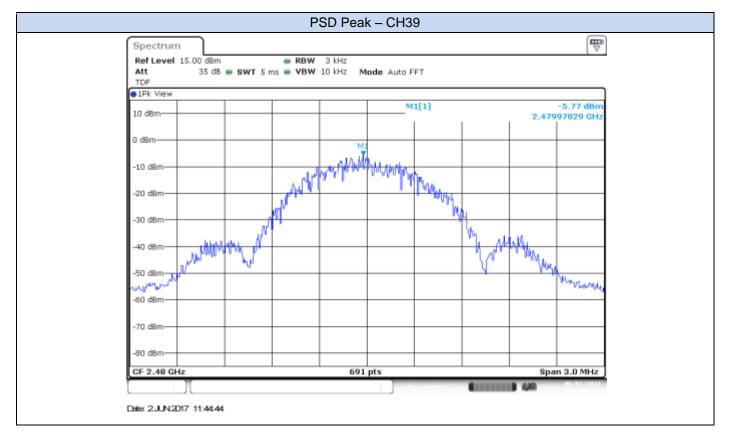
Results tables

Mode	СН	Frequency [MHz]	PSD Peak [dBm]
	0	2402	-6.42
BLE	19	2440	-6.00
	39	2480	-5.77











C.1.4 Out-of-band emission (Conducted)

Test Limits

FCC part	RSS part	Limits								
15.247 (d)	RSS-247 Clause 5.5	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.								
15.209	RSS-Gen Clause 8.9	Radiated emissions of must also comply with Freq Range (MHz) 30-88 88-216 216-960 Above 960 The emission limits employing CISPR q kHz, 110-490 kHz at three bands are base For average radiated a limit specified when to 20 dB above the in	h the radiated em Field Stregth (μV/m) 100 150 200 500 shown in the abo Jasi-peak detecto nd above 1000 M ed on measureme d emission measur n measuring with	Field Stregth (dBµV/m) 40 43.5 46 54 ve table are bas r except for the 1Hz. Radiated en nts employing ar rements above 1 peak detector fu	Meas. Distance (m) 3 3 3 3 3 5 5 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7	a): ments s 9-90 these or. s also				

Test procedure

The setup below was used to measure the out-of-band emissions. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

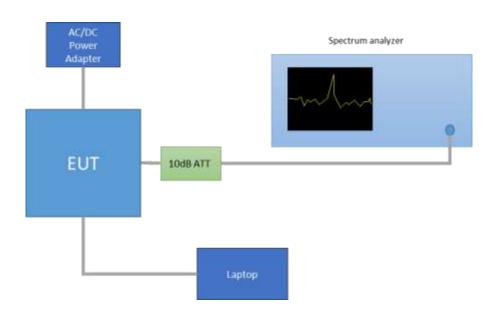
In case of Band Edge measurements falling in restricted bands, the declared Antenna Gain is also compensated in the graph. The declared maximum antenna gain is 3.24dBi.

For Band Edge measurements falling in restricted bands, the following limits in dBm were applied for the average detector after the conversion from the limits detailed above in dB μ V/m, according to FCC 47 CFR part 15 - Subpart C – §15.209(a). The limits in dBm for peak detector are 20dB above the indicated values in the table.

	§15.209(a)		Converted values			
Freq Range (MHz)	Distance (m)	Field strength (microvolts/meter)	Field strength (dB microvolts/meter)	Power (dBm)		
Above 960	3	500	54.0	-41.2		



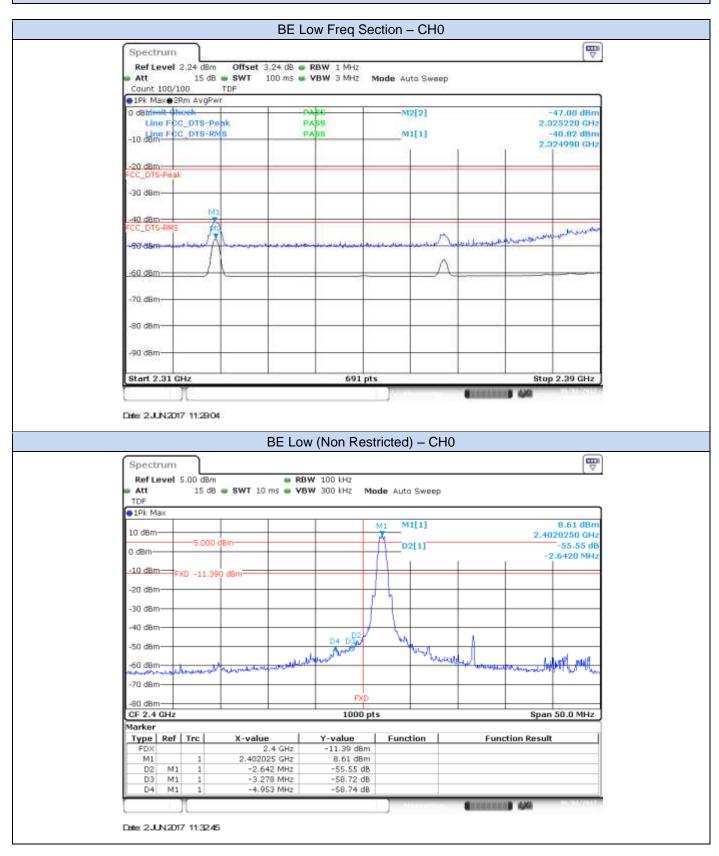
The setup below was used to measure the out-of-band emissions. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.



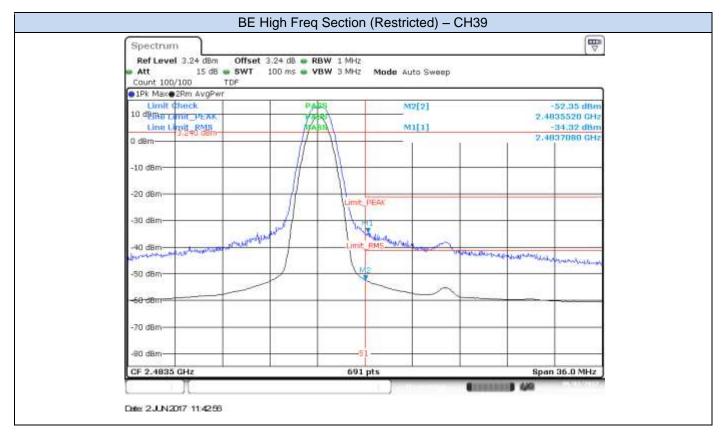
Note: these PSD_{Peak} values are shown just as a reference for the compliance of the Out-of-band Measurements. Thus the RBW used for these measurements was 100kHz.

Mode	СН	Frequency [MHz]	PSD Peak [dBm]
	0	2402	8.55
BLE	19	2440	8.75
	39	2480	9.07



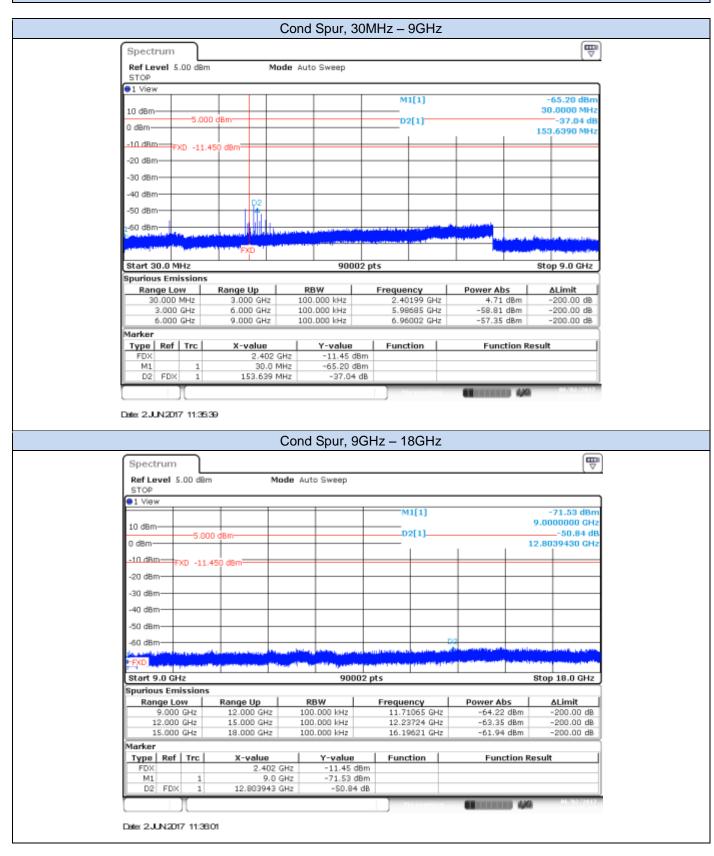








BLE, CH0

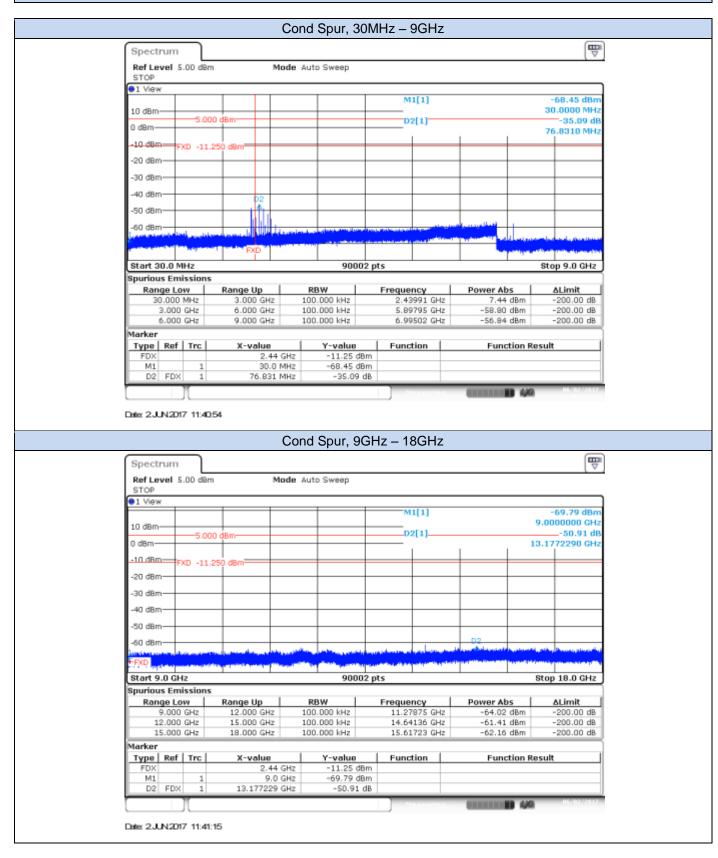




Spectrum					
Ref Level 5.00 d	lêm M	ode Auto Sweep			
View					
			M1[1]		-70.29 dBm
10 dBm				18	.0000000 GHz
5	.000 dBm		D2[1]		-50.42 dB
0 d8m				1 1	.3170930 GHz
-10 dBm FXD -1	11.450 dBm				
-20 dBm					
-30 dBm					
-40 dBm-					
-50 dBm	_				_
-60 dBm			n2		
the inclusion of the local of the	the set of the second sec	hand a state of the	and the state of the	and the state of the	Local Contractions
FXD - head of the second	territ and the second	and the second states of the	and the second second second second		and the second second
Start 18.0 GHz		900	02 pts	5	top 26.5 GHz
Spurious Emissio	ns				
Range Low	Range Up	RBW	Frequency	Power Abs	۵Limit
18.000 GHz 21.000 GHz	21.000 GHz 24.000 GHz	100.000 kHz 100.000 kHz	20.44385 GHz 23.95595 GHz	-62.47 dBm -61.83 dBm	-200.00 dB -200.00 dB
21.000 GHz 24.000 GHz	24.000 GHz 26.500 GHz	100.000 kHz	23.95595 GHz 26.29155 GHz	-62.21 dBm	-200.00 dB
Marker	, concertaine	2001000 /018	00127200 GHz		200.00 00
Type Ref Trc	X-value	Y-value	Function	Function Re	sult
FDX	2.402				
M1 1					
D2 FDX 1	20.317093	GHz -50.4	2 dB		
				444	



BLE, CH19

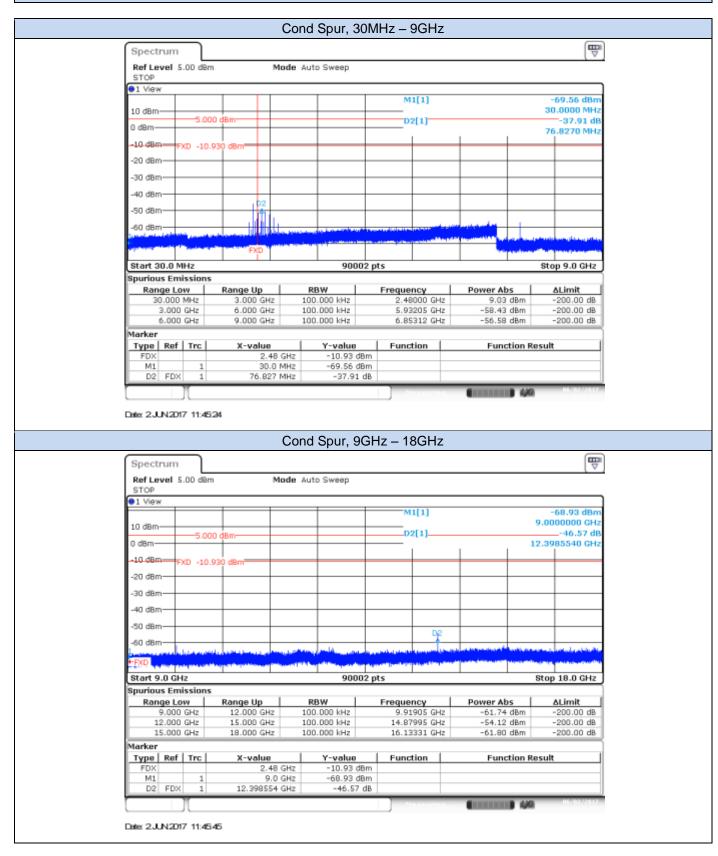




Spectrum								Ē
Ref Level 5.0	0 dBm	Mode	Auto Sweep					(-
STOP 1 View								
OT AIGM.				-	M1[1]			-71.43 dBm
10 dBm					_		18.	0000000 GHz
	-5.000 de	3m-			D2[1]			50.56 dB
0 dBm						1	17.	8805500 GHz
-10 dBm FXD	-11.250	dBm						+
-20 dBm							<u> </u>	
-30 dBm								
-40 dBm								
-50 dBm								
-60 dBm-		<u>n2</u>				Anna Anna	a. damana	and second a second at the
FXD								
	-							
Start 18.0 GH Spurious Emis			9000	02 pts			51	op 26.5 GHz
Range Low		ange Up	RBW	Erec	uency	Power Al	hs I	∆Limit
18.000 G		21.000 GHz	100.000 kHz	20	.32055 GHz	-61.81		-200.00 dB
21.000 G		24.000 GHz	100.000 kHz		.57073 GHz	-62.01		-200.00 dB
24.000 G	Hz	26.500 GHz	100.000 kHz	24	.40411 GHz	-61.72	dBm	-200.00 dB
Marker Type Ref 1	Tere I	X-value	Y-value	1 6	Inction	Euro	tion Res	
Type Ref 1 FDX	ing l	2.44 GHz	-11.25 d		ancoun	Fund	autori Kes	un
M1	1	18.0 GHz	-71.43 d					
D2 FDX	1	17.88055 GHz	-50.56	dB				
					Measuring	COLUMN 2 IS NOT	140	05/02/2017



BLE, CH39





Spectru	um										E
Ref Lev	el 5.(00 dBm	м	ode A	uto Sweep						
●1 View											
10 dBm-		5.000	dBm					(1) (1)		18.0	-68.02 dBm 000000 GHz -50.33 dB
0 d8m-	+					+				22.0	733570 GHz
-10 dBm-	FX	D -10.93	0 dBm								
-20 dBm-	-					-			-		-
-30 dBm-	_				_	_					
-40 dBm-											
-50 dBm-									D2		
-60 dBm-		a had had a start					u and determine	مسطقيه	102	and a little states	and the second second
+FXD			and the second			-		and the second	- Contraction of the local diversion of the local diversion of the local diversion of the local diversion of the		and the state of the
Start 18	0.01	12			000	02 pt		-		P#c	op 26.5 GHz
Spurious					900	oz pu	.5			au	p 20.3 GH2
Rang			Range Up		RBW		Freque	icy	Power At	ns	∆Limit
	.000 0		21.000 GHz	1	.00.000 kHz			725 GHz	-61.89		-200.00 dB
	000 0		24.000 GHz		.00.000 kHz			745 GHz	-60.94		-200.00 dB
24.	.000 0	Hz	26.500 GHz	1	.00.000 kHz		24.55	336 GHz	-61.26	dBm	-200.00 dB
Marker											
	Ref	Trc	X-value		Y-value		Funct	ion	Fund	tion Resu	ilt
FDX		-	2.48		-10.93 c						
M1 D2	EDX	1	18.0		-68.02 c						
	- Long		22.013351	ans	-00/33	ab	_				05/02/2017
		1					21			B 1/0	



C.1.5 Radiated spurious emission

Standards references

FCC part	RSS part	Limits								
	mu RSS-247	Radiated emissions which fall in the restricted bands, as defined in §15.205 must also comply with the radiated emission limits specified in §15.209(a):								
			Freq Range (MHz)	Field Stregth (μV/m)	Field Stregth (dBµV/m)	Meas. Distance (m)				
			30-88	100	40	3				
			88-216	150	43.5	3				
			216-960	200	46	3				
15.247 (d) 15.209	Clause 5.5 RSS-Gen		Above 960	500	54	3				
13.209	Clause 8.9	emple kHz, three For a a limi	bying CISPR qua 110-490 kHz an bands are based verage radiated of t specified when	asi-peak detector d above 1000 M d on measureme emission measur	r except for the IHz. Radiated en nts employing ar ements above 1 peak detector fu	sed on measurer frequency bands mission limits in average detecto 000 MHz, there is unction, correspo	s 9-90 these or. s also			

Test procedure

The setups below were used to measure the radiated spurious emissions.

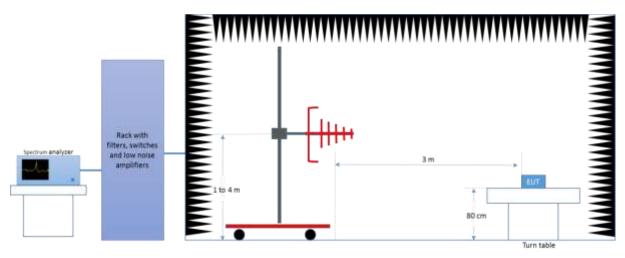
Depending of the frequency range and bands being tested, different antennas and filters were used.

The final measurement is done by varying the antenna height from 1m to maximum available height in the correspondent setup, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

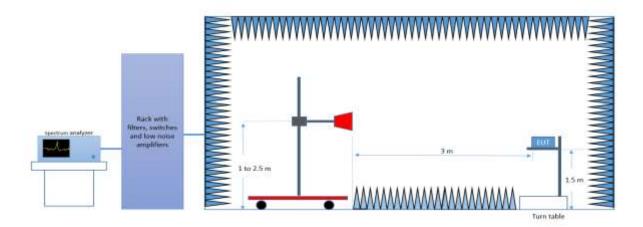
The radiated spurious emissions were measured on the lowest, middle and highest channels.



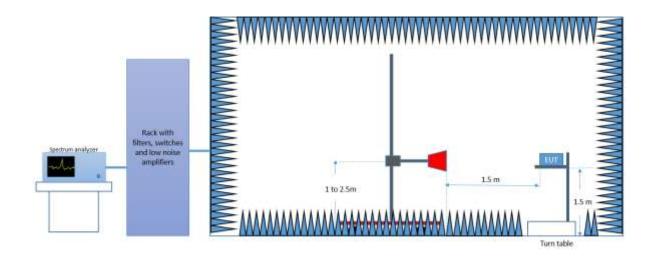
Radiated Setup < 1GHz



Radiated Setup 1 GHz - 18 GHz



Radiated Setup > 18 GHz





Sample Calculation

The field strength is deduced from the radiated measurement using the following equation:

$E = 126.8 - 20log(\lambda) + P - G$

where

E is the field strength of the emission at the measurement distance, in $dB\mu V/m$

P is the power measured at the output of the test antenna, in dBm

 λ is the wavelength of the emission under investigation [300/f_{MHz}], in m

G is the gain of the test antenna, in dBi

NOTE - The measured power P includes all applicable instrument correction factors up to the connection to the test

Antenna e.g. cable losses, amplifier gains.

For field strength measurements made at other than the distance at which the applicable limit is specified, the field strength of the emission at the distance specified by the limit is deduced as follows:

E_{SpecLimit} = E_{Meas} + 20log(D_{Meas}/D_{SpecLimit})

where

 $E_{SpecLimit}$ is the field strength of the emission at the distance specified by the limit, in $dB\mu V/m$

 E_{Meas} is the field strength of the emission at the measurement distance, in $dB\mu V/m$

D_{Meas} is the measurement distance, in m

DspecLimit is the distance specified by the limit, in m



Test Results

30 MHz – 26.5 GHz, BLE

Radiated Spurious – CH0

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBuV/m	dBuV/m	dBuV/m	dB
62.5		31.4	40	8.7
62.5	32.9		40	7.2
3441.3	59.8		74	14.3
3469.4		46.8	54	7.3
6337.3		47.9	54	6.1
6343.8	60.7		74	13.4
12296.2	51.4		74	22.7
12306.8		38.9	54	15.2
17967.6	61.1		74	13.0
17995.7		49.4	54	4.7
24511.4	49.0		74	25.1
24570.9		36.2	54	17.9

Radiated Spurious – CH19

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBuV/m	dBuV/m	dBuV/m	dB
62.5		31.6	40	8.5
62.5	33.6		40	6.4
3432.5	59.4		74	14.7
3449.1		46.7	54	7.4
6329.3	60.5		74	13.6
6335.8		47.8	54	6.2
12512.2		38.9	54	15.2
12522.4	51.5		74	22.6
17957.5	61.2		74	12.9
17963.3		49.1	54	5.0
24547.5	48.6		74	25.4
24569.8		36.3	54	17.7



Radiated Spurious – CH39

Frequency	MaxPeak	Avg	Limit	Margin
MHz	dBuV/m	dBuV/m	dBuV/m	dB
32.5		26.8	40	13.2
32.5	32.3		40	7.8
3422.5	60.3		74	13.7
3439.4		46.6	54	7.5
6284.7	61.4		74	12.6
6298.5		47.8	54	6.2
12371.1		38.9	54	15.2
12383.2	51.6		74	22.5
17995.2	61.9		74	12.2
17995.7		49.4	54	4.7
24578.3	49.3		74	24.8
24582.5		36.2	54	17.8