RF 50 Ω	2 AC CORREC	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	01:53:48 PM Apr 15, 2019 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast IFGain:Low	Trig: Free Run Atten: 30 dB		TYPE MWWWWWWW DET PNNNN	Auto Tum
dB/div Ref 20.00			Mkr	3 3.020 75 GHz -41.15 dBm	Auto Tune
<b>9</b> 0.0 .00 .00					Center Fre 5.015000000 GH
0.0 0.0 0.0	3		2 <sup>2</sup>	-15.55 dBm	<b>Start Fre</b> 30.000000 MH
5.0 5.0 5.0					<b>Stop Fre</b> 10.000000000 GH
tart 30 MHz Res BW 1.0 MHz	×		Sweep 1	Stop 10.000 GHz 8.7 ms (40001 pts) FUNCTION VALUE	CF Ste 997.000000 MH Auto Ma
1 N 1 f 2 N 1 f 3 N 1 f 4 5	2.434 27 GHz 6.571 57 GHz 3.020 75 GHz	13.45 dBm -40.38 dBm -41.15 dBm			Freq Offs 0 ⊦
6 7 8 9 9					
2					

Agilent Spectrum A										
L <mark>XI</mark>	RF 50 Ω	AC CC	RREC		SE:INT	Avg '	ALIGNAUTO Type: Log-Pwr	TRACE	Apr 15, 2019	Frequency
		F	PNO: Fast Gain:Low	Trig: Free Atten: 30				TYPE DET	M WAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	
			Guineow				Mkr5 1	6.726 37	'5 GHz	Auto Tune
10 dB/div R	ef 20.00 c	lBm						-34.3	7 dBm	
10.0										Center Freq
0.00										17.500000000 GHz
-10.0									-15.55 dBm	
-20.0				▲5		<u>^4</u>	3		{ <sup>2_1</sup> (	Start Freq
-30.0										10.000000000 GHz
-40.0										
-50.0										Stop Freq
-70.0										25.00000000 GHz
Start 10.000 #Res BW 1.0			#VE	3W 3.0 MHz			Sweep 4	Stop 25.0 0.0 ms (40	000 GHZ	CF Step 1.50000000 GHz
MKR MODE TRC S	CL	×		Y	FI	UNCTION	FUNCTION WIDTH	FUNCTION		Auto Man
1 N 1 1 2 N 1	F	24.956 50 24.113 50		-26.81 dB -27.12 dB						
3 N 1		20.883 25 19.071 62	50 GHz	-31.22 dB -33.39 dB	m					Freq Offset
5 N 1 1	7	16.726 37		-34.37 dB						0 Hz
7										
8 9										
10										
12										
MSG							STATUS			

#### TM 2 & 2462



### High Band-edge



	<mark>rum Anal</mark> ı RF	50 Q 🥂	DC	CORREC		SEM	SE:INT			LIGNAUTO	05:09:091	PM Apr 15, 2019	F
				PNO: Fa IFGain:Lo	st 🖵	Trig: Free Atten: 30		Avg	Type:	Log-Pwr	TRA TY D	CE 123456 PE MWWWW ET P NNNNN	Frequency
) dB/div	Ref	20.00 di	Bm									5.4 kHz 68 dBm	Auto Tur
o.o													Center Fre 15.004500 Mi
												-16.10 dBm	Start Fre 9.000 kł
0.0	*****	Nag Yord A State	ar og stallag af	HDY OCTON	-Uni unifer	lla de la companya de	en fyr yn ferstal d	1	il	ria:X <sup>1</sup> a. <sup>1</sup> 919ia/vy.t.U	a and her a grant and a gra	Herjander Naugel <sup>I</sup> nser Minuel	<b>Stop Fre</b> 30.000000 Mi
tart 9 kl Res BW	100 k	Hz	×		1	300 kHz Y		ICTION		Sweep 5	.33 ms (4	0.00 MHz 0001 pts)	<b>CF Ste</b> 2.999100 Mł <u>Auto</u> Mł
1 N 2 3 3 4 5 5 6	1 f		2	295.4 kHz		-53.68 dE	3m						Freq Offs 0 I
7 8 9 9 0 9													
1													

Agilent Spectr (XI	um Analyze RF	e <mark>r - Swept S/</mark>   50 ณ AC		REC	SEN	SE:INT	Ava 1	ALIGNAUTO	05:10:06 PM	Apr 15, 2019	Frequency
10 dB/div	Ref 20	).00 dBm	IFG	IO: Fast Gain:Low	Trig: Free Atten: 30				TYPE DE 4 3.272	PNNNN	Auto Tune
Log 10.0 0.00			01								Center Freq 5.015000000 GHz
-20.0 -30.0 -40.0				4		A Sung of Editing Con Live	3	2 <sup>2</sup>		-16.10 dBm	Start Freq 30.000000 MHz
-50.0 <b></b> -60.0											<b>Stop Freq</b> 10.000000000 GHz
Start 30 N #Res BW	1.0 MH		× 2.465 42		W 3.0 MHz		INCTION	Sweep 1	Stop 10. 8.7 ms (40 FUNCTION	0001 pts)	<b>CF Step</b> 997.000000 MHz <u>Auto</u> Man
2 N 1 3 N 1 4 N 1 5 6 7 8 9			7.292 15 5.208 16 3.272 99	5 GHz 5 GHz	-40.60 dE -41.22 dE -41.52 dE	m m					<b>Freq Offset</b> 0 Hz
9 10 11 12 MSG								STATUS			

# **Dt&C**



TM 2 & 2472



Reference

**High Band-edge** 



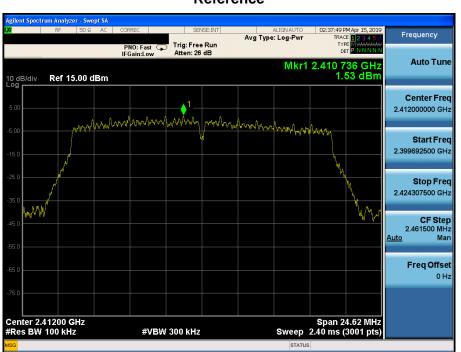
	RF	<mark>er - Swept S/</mark> 50 Ω <u>A</u> DC			SEN	SE:INT		ALIGNAUT	0 02:33:47	PM Apr 15, 2019	
				ast 🖵 .ow	Trig: Free Atten: 20		Avg	Type: Log-Pv	vr TRA	CE 123456 (PE MWWWWWW DET P N N N N N	Frequency
dB/div	Ref 1	0.00 dBm	1							14.9 kHz 48 dBm	Auto Tun
29 .00 .00 .00											Center Fre 15.004500 M⊦
D.0 D.0 D.0 1.0										-26.23 dBm	<b>Start Fre</b> 9.000 kH
	iyanti yiyati ku	terand (1999) of the sec	yllanovýchovat Apper	n di territari	heithe ng son dit ger	an a	<b>n</b> eusenheu	hadayariyi karistar	lan si dan kana si sa si sa si	tey, nel plonations	Stop Fre 30.000000 M⊦
tart 9 kH Res BW	100 kH		×		300 kHz Y		NCTION	Sweep	5.33 ms (4		CF Ste 2.999100 Mi Auto Ma
1 N 1 2 3 4 5 6	f		314.9 kH		-63.48 dE	.m					Freq Offs 0 F
7 B											
2											

Agilent Spectrum Analyzer - Swe					
<b>ιχι</b> RF 50 Ω	AC CORREC	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	02:35:09 PM Apr 15, 2019 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast 🕞 IFGain:Low	Trig: Free Run Atten: 20 dB		DET P N N N N N	
			Mkr	3 3.035 71 GHz	Auto Tune
10 dB/div Ref 10.00 c				-51.79 dBm	
0.00	Q1				Center Freq
-10.0					5.015000000 GHz
-20.0				-26.23 dBm	
-30.0					Start Freq
-40.0	3		<sup>2</sup>		30.000000 MHz
-50.0					
-60.0					Stop Freq
-70.0					10.00000000 GHz
Start 30 MHz #Res BW 1.0 MHz	#VBV	/ 3.0 MHz	Sweep 1	Stop 10.000 GHz 8.7 ms (40001 pts)	CF Step 997.000000 MHz
MKR MODE TRC SCL	×		UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
1 N 1 f 2 N 1 f	2.468 16 GHz 6.986 82 GHz	1.54 dBm -50.15 dBm -51.79 dBm			
3 N 1 f	3.035 71 GHz	-51.79 dBm			Freq Offset
5					0 Hz
7 8					
9					
11					
12					
MSG			STATUS		

# **Dt&C**

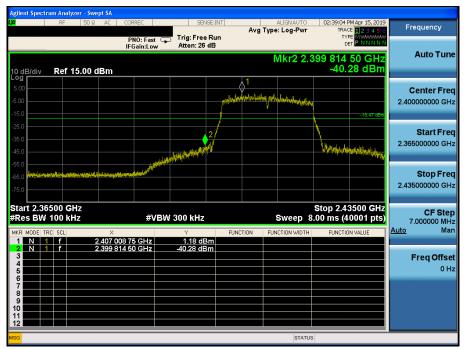


TM 3 & 2412



Reference

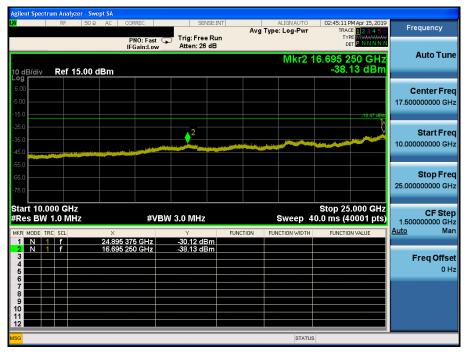
#### Low Band-edge



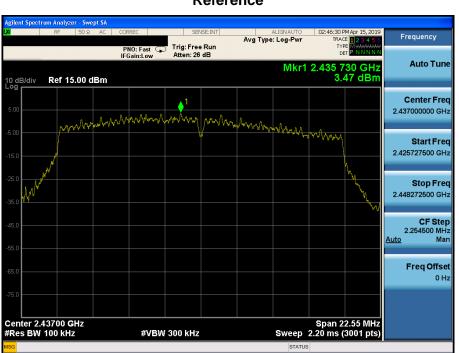
RF	zer - Swept SA 50 Ω 🛕 DC CORRE	C SENSE:1	NT ALIGNAUTO	02:40:01 PM Apr 15, 2019	_
	PNO IFGai	: Fast 😱 Trig: Free Ru n:Low Atten: 26 dB	Avg Type: Log-Pw in	r TRACE 123456 TYPE MWWWWW DET PNNNN	Frequency
dB/div Ref 1	5.00 dBm			Mkr1 289.4 kHz -56.93 dBm	Auto Tun
<b>g</b> 00 00					Center Fre 15.004500 M⊦
5.0 5.0 1					<b>Start Fre</b> 9.000 kH
5.0 5.0 5.0	indersonal Materian International Society and the	enalesisiefennessetteseksisertie	ken spinklerningen under meterheit weit alle spin effentige erforter och	an a	Stop Fre 30.000000 Mi
art 9 kHz les BW 100 kH	×	<b>#VBW 300 kHz</b>	Sweep	Stop 30.00 MHz 5.33 ms (40001 pts)	CF Ste 2.999100 MH Auto Ma
N 1 f	289.4	kHz -56.93 dBm			Freq Offs 0 H

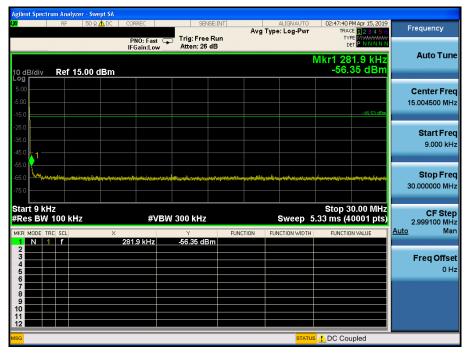
RF 50 9	Ω AC CORF	REC	SENSE:INT	ALIGNAUTO	02:41:06 PM Apr 15, 2019	
	PN	0: Fast 😱 ain:Low	Trig: Free Run Atten: 26 dB	Avg Type: Log-Pwr	TRACE 23456 TYPE MWWWW DET PNNNNN	Frequency
dB/div Ref 15.00				Mkr	4 3.186 50 GHz -45.69 dBm	Auto Tune
	¥1				-18:47 dBm	Center Fre 5.015000000 GH
		4			And Market and a reason of Market and U.S.	Start Fre 30.000000 M⊦
						<b>Stop Fre</b> 10.00000000 GF
art 30 MHz es BW 1.0 MHz		#VBW			Stop 10.000 GHz 8.7 ms (40001 pts)	<b>CF Ste</b> 997.000000 MH Auto Ma
R MODE TRC SCL N 1 f N 1 f N 1 f N 1 f N 1 f	× 2.407 35 6.989 81 4.831 55 3.186 50	GHz GHz	9.75 dBm -44.40 dBm -45.62 dBm -45.69 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offso 0 H

# **Dt&C**



#### TM 3 & 2437

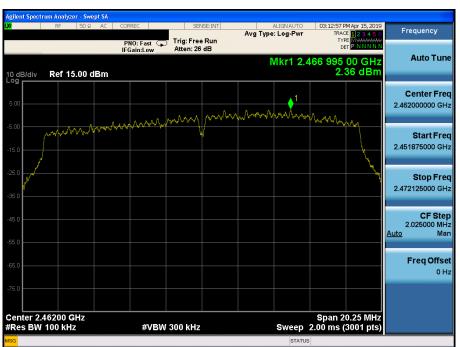




gilent Spectrum Analyzer - Sw RF 50 Ω	AC CORREC	SENSE:INT	ALIGNAUTO	02:49:07 PM Apr 15, 2019	
10 303	PNO: Fast IFGain:Low	Trig: Free Run	Avg Type: Log-Pwr	TRACE 12 3 4 5 6 TYPE MWWWW DET P N N N N N	Frequency
0 dB/div Ref 15.00	dBm		Mkr	3 9.397 81 GHz -45.19 dBm	Auto Tune
<b>6</b> 5.00 5.00 5.00 5.00	X1			-16,53 dBm	<b>Center Fre</b> 5.015000000 GH
25.0 15.0 15.0				3	<b>Start Fre</b> 30.000000 MH
55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0					<b>Stop Fre</b> 10.000000000 G⊦
tart 30 MHz Res BW 1.0 MHz KR MODE TRC SCL	×		Sweep 1	Stop 10.000 GHz 8.7 ms (40001 pts) FUNCTION VALUE	<b>CF Ste</b> 997.000000 M⊦ <u>Auto</u> Ma
1 N 1 f 2 N 1 f 3 N 1 f 4 5 6	2.433 77 GHz 6.262 00 GHz 9.397 81 GHz	11.10 dBm -44.64 dBm -45.19 dBm			Freq Offs 0 ⊦
7 8 9 0 1					
			STATUS		

Y     RF     SO G     AC     CORREC     SERVESINT     ALIGNAUTO     DESCRIPTION     THACE     DESCRIPTION     Auto Tune       10     DESCRIPTION     Ref 15.00 dBm	Agilent Spectrum											
Pho: Fast     Trig: Free Run Atten: 26 dB     Mkr4 16.769 125 GHz     Auto Tune       0 dB/div     Ref 15.00 dBm     -38.50 dBm     -38.50 dBm     Center Freq 17.50000000 GHz       500	LXI	RF 50	DΩ AC	CORREC		SEN	ISE:INT	Ανα Τι	ALIGNAUTO	TRAC	E 1 2 3 4 5 6	Frequency
Instruction     Mkr4 16.769 125 GHz -38.50 dBm     Auto Tune       10 dB/div     Ref 15.00 dBm     -38.50 dBm										TYP		
INREA     Top Start     Center Freq 17.50000000 GHz       600				IFGain:L	ow	Atten: 26	dB		b d l d			Auto Tune
500	10 dB/div	Ref 15.0	0 dBm									
500												Center Fred
1000   1000   1000000000   1000000000   1000000000   1000000000   1000000000   1000000000   1000000000   100000000000000   10000000000   10000000000   10000000000   10000000000   10000000000   10000000000   100000000000   1000000000000   100000000000   100000000000   10000000000000   1000000000000   1000000000000   1000000000000	-5.00											
350   4   3   4   3   4   0   Start Freq     150   10	-15.0										-16.53 dBm	
450   10.00000000 GHz     1650   10.00000000 GHz     1650   10.0000000 GHz     1750   10.0000000 GHz     Start 10.000 GHz   Stop 25.000 GHz     #Res BW 1.0 MHz   #VBW 3.0 MHz   Sweep 40.0 ms (40001 pts)     1   1   1   1     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1   1     1   1   1   1   1   1   1   1     1   1   1   1   1   1   1   1   1     1	-25.0					4			<u>^2</u>			Otoret Enor
450	-35.0						\^ <b>`</b>			فأطلحها علم وورورا ما	and the state	
1   1	-45.0	The second second second		and a state				And and a second se				10.00000000 3112
75.0   25.00000000 GHz     Start 10.000 GHz   Stop 25.000 GHz     #Res BW 1.0 MHz   #VBW 3.0 MHz     Sweep 40.0 ms (40001 pts)     1   1     1   1     2   1     1   1     2   1     1   1 <	-55.0											
XI-1   F   Y   FUNCTION   FUNCTION WIDTH   FUNCTION VALUE     1   N   1   f   24.757.375 GHz   -30.79 dHm	-65.0											
#Res BW 1.0 MHz     #VBW 3.0 MHz     Sweep 40.0 ms (40001 pts)     1.5000000 GHz       MKR MODE     TRC SCL     X     Y     FUNCTION     FUNCTION VALUE     Auto     Man       1     N     1     f     24.757.875 GHz     -50.79 dBm     Auto     Man       2     N     1     f     21.407.125 GHz     -50.79 dBm     FUNCTION VALUE     FUNCTION VALUE     Auto     Man       4     N     1     f     18.625 000 GHz     -38.20 dBm     Freq Offset     0 Hz     0 Hz <td< td=""><td>-75.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>25.000000000 GHz</td></td<>	-75.0											25.000000000 GHz
#Res BW 1.0 MHz     #VBW 3.0 MHz     Sweep 40.0 ms (40001 pts)     1.5000000 GHz       MKR MODE     TRC SCL     X     Y     FUNCTION     FUNCTION VALUE     Auto     Man       1     N     1     f     24.757.875 GHz     -50.79 dBm     Auto     Man       2     N     1     f     21.407.125 GHz     -50.79 dBm     FUNCTION VALUE     FUNCTION VALUE     Auto     Man       4     N     1     f     18.625 000 GHz     -38.20 dBm     Freq Offset     0 Hz     0 Hz <td< td=""><td>Start 10.000</td><td>) GHz</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Stop 25</td><td>.000 GHz</td><td></td></td<>	Start 10.000	) GHz								Stop 25	.000 GHz	
MKR. MODE     TRC     SCL     X     Y     FUNCTION     FUNCTION VAILUE     Auto     Man       1     N     1     f     24.757.357.6Hz     -50.79 dBm     -50.79 dBm     -     <				#	VBW	3.0 MHz			Sweep 4			
2     N     1     f     21 600 GHz     -35 58 dBm     Freq Offset       3     N     1     f     18 625 000 GHz     -38 20 dBm     OHz       4     N     1     f     16 769 125 GHz     -38 20 dBm     OHz       6     -     -     -     -     OHz     OHz       7     -     -     -     -     -     OHz       9     -     -     -     -     -     OHz       10     -     -     -     -     -     -     -       11     -     -     -     -     -     -     -	MKR MODE TRC	SCL			1			TION I	FUNCTION WIDTH	FUNCTIO	N VALUE	
3     N     1     f     18.625 000 GHz     -38.20 dBm     Freq Offset     0 Hz       6     7     7     16.769 125 GHz     -38.50 dBm     7     16.769 125 GHz     -38.50 dBm     0 Hz     0 Hz     0 Hz     1     <		f	24.75	7 375 GHz	z	-30.79 dE	3m					
5 0 Hz 6 0 Hz 7 0 0 Hz 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 N 1	f	18.62	5 000 GHz	z	-38.20 dE	3m					Freq Offset
7	5		16.76	9 125 GH2	2	-38.50 dE	sm					0 Hz
	10											
MSG STATUS												
	MSG								STATUS	3		

TM 3 & 2462



**High Band-edge** 



RF 50 Ω	⚠ DC   CORREC	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	03:15:30 PM Apr 15, 2019 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fas IFGain:Lo	Trig: Free Run Atten: 26 dB			
0 dB/div Ref 15.00	dBm			Mkr1 281.9 kHz -56.48 dBm	Auto Tune
<b>6</b> g 5.00 5.00 5.00				-17.04 dDm	<b>Center Fre</b> 15.004500 MH
25.0 25.0 15.0					<b>Start Fre</b> 9.000 k⊢
55.0 55.0 55.0	teritar series mentering tagen de series franse	ni dengi kali maryan kang kang kang kang kang kang kang ka	ianaantoo kataanaaninin kaasaa kataa kataa	for de glace of glace of the design of the	Stop Fre 30.000000 M⊦
tart 9 kHz Res BW 100 kHz	#\ ×	/BW 300 kHz	Sweep 5	Stop 30.00 MHz 33 ms (40001 pts)	<b>CF Ste</b> 2.999100 MH Auto Ma
1     N     1     f       2     -     -     -       3     -     -     -       4     -     -     -       5     -     -     -	281.9 kHz	-56.48 dBm			Freq Offs 0 H
6 7 8 9					
9					

Agilent Spectrum Analyzer - Swept S/					
<b>LXI</b> RF 50Ω AC	CORREC	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	03:17:26 PM Apr 15, 2019 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast 🖵 IFGain:Low	Trig: Free Run Atten: 26 dB		DET P N N N N N	
	II Gall.Eow		Mkr	2 6.464 89 GHz	Auto Tune
10 dB/div Ref 15.00 dBm	1			-44.71 dBm	
5.00	¥1				Center Freq
-5.00					5.015000000 GHz
-15.0				-17.64 dDm	
-25.0					Start Freq
-35.0			2		30.000000 MHz
-45.0					
-55.0					Stop Freq
-65.0					10.000000000 GHz
Start 30 MHz #Res BW 1.0 MHz	#\/D\\	3.0 MHz	Swoon 1	Stop 10.000 GHz 8.7 ms (40001 pts)	CF Step
	#VDV			FUNCTION VALUE	997.000000 MHz <u>Auto</u> Man
1 N 1 f	2.466 42 GHz	11.21 dBm	ICTION FONCTION WIDTH	FUNCTION VALUE	
2 N 1 f	5.464 89 GHz	-44.71 dBm			Freq Offset
4 5					0 Hz
6					
8					
10					
12					
<mark>MSG</mark>			STATUS		

# **Dt&C**

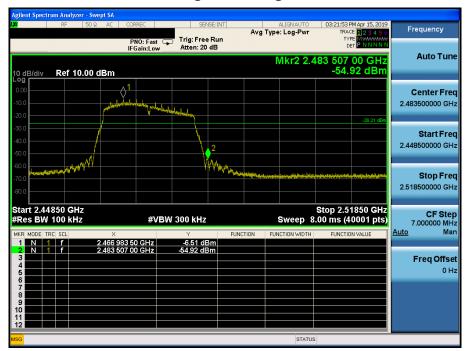


TM 3 & 2472



Reference

#### **High Band-edge**



	RF	<mark>zer - Swe</mark> 50 ຊ <b>/</b>		CORREC		SEI	NSE:INT		AL	.IGN AUTO	03:22:46	PM Apr 15, 2019	_	
				PNO: IFGain	Fast 🖵 :Low	Trig: Fre Atten: 20		Avg	Type:	Log-Pwr	TRA	CE 123456 PE MAAAAAAA ET P N N N N N	Frequenc	
dB/div	Ref '	10.00 d	Bm									1.9 kHz 91 dBm	Auto	Tun
9 00 1.0 1.0													Center 15.004500	
												-26.21 dBm	<b>Start</b> 9.00	
	i për fillenteren	iterati eterritari	s <sub>e</sub> ist interv <sub>e</sub> u	Herdenser Mart	n di pinang kitaka	vitetainaya galaga ya	er egelt stationelle	layati wayitu katita		(add) <sup>for</sup> top carbon, the	i her yn yf fersiai fynai	landersta syndagen (a fail	<b>Stop</b> 30.00000	
art 9 kH Res BW	100 kl	lz	×		#VBW	300 kHz Y		JNCTION		weep 5	.33 ms (4	0.00 MHz 0001 pts)	CF 2.999100 <u>Auto</u>	
N 1 2 3 4 5 5	f			281.9 k	Hz	-59.91 dl	3m						Freq C	Offs 0 H

RF 50 \$		RREC	SENS		Avg Type:	LIGNAUTO Log-Pwr	TRACE	Apr 15, 2019	Frequency
	PI IFC	NO: Fast 🖵 Gain:Low	Trig: Free F Atten: 20 d				DET	PNNNN	Auto Tur
dB/div Ref 10.00	dBm					Mkr	5 9.395 8 -51.4	32 GHz 7 dBm	Auto Tun
99 00 0.0 0.0	\\     								Center Fre 5.015000000 GH
0.0 0.0 0.0		4	3	2 <sup>2</sup>		hing provides to be types		-26.21 dBm	Start Fre 30.000000 M⊦
0.0 (				and a second					<b>Stop Fre</b> 10.000000000 GF
art 30 MHz Res BW 1.0 MHz		#VBW	3.0 MHz				Stop 10.0 8.7 ms (40	001 pts)	CF Ste 997.000000 MH
R MODE TRC SCL	× 2.468 4		Y 1.32 dBr		TION FUNC	TION WIDTH	FUNCTION	VALUE	<u>Auto</u> Ma
2 N 1 f 3 N 1 f 4 N 1 f 5 N 1 f	5.578 3 4.802 3 3.326 3 9.395 8	9 GHz 3 GHz	-50.91 dBn -51.34 dBn -51.44 dBn -51.47 dBn	n n					<b>Freq Offs</b> 0 H
6 7 8 9									
 3						STATUS			





#### 8.5 Radiated spurious emissions

#### Test Requirements and limit, §15.247(d), §15.205, §15.209

In any 100 kHz bandwidth outside the operating frequency band, 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. In case the emission fall within the restricted band specified on 15.205(a) and (b), then the 15.209(a) limit in the table below has to be followed.

•	FCC	Part	15.209(	a) and	(b)
•	FUU	Part	15.209(	a) and (	(D)

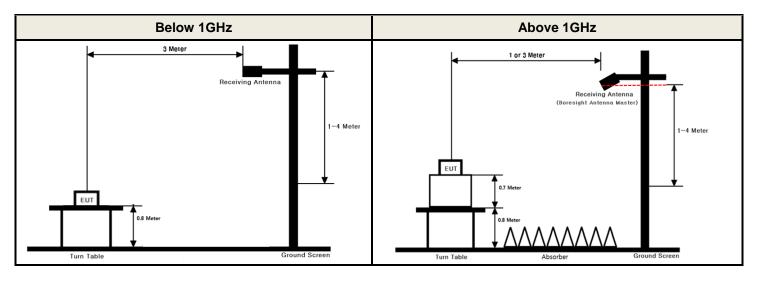
Frequency (MHz)	Limit (uV/m)	Measurement Distance (meter)
0.009 - 0.490	2400/F (kHz)	300
0.490 – 1.705	24000/F (kHz)	30
1.705 – 30.0	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	500	3

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	156.7 ~ 156.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	162.0125 ~ 167.17	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	167.72 ~ 173.2	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	240 ~ 285	2655 ~ 2900		
8.291 ~ 8.294	37.5 ~ 38.25	322 ~ 335.4	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	399.90 ~ 410	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	608 ~ 614	3345.8 ~ 3358		
		960 ~ 1240	3600 ~ 4400		

• FCC Part 15.205(b): The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

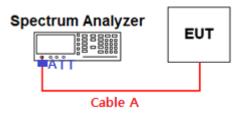
#### Test Configuration



#### Test Procedure

- 1. The EUT is placed on a non-conductive table, emission measurements at below 1 GHz, the table height is 80 cm and above 1 GHz, the table height is 1.5 m.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 1 or 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.

#### Conducted Measurement



#### Path loss information

Frequency (GHz)	Path Loss (dB)	Frequency (GHz)	Path Loss (dB)		
0.03	3.16	15	7.17		
1	3.40	20	8.37		
2.412 & 2.437 & 2.472	4.04	25	9.46		
5	4.60	-	-		
10	6.07	-	-		

Note 1: The path loss from EUT to Spectrum analyzer was measured and used for test. Path loss (S/A's correction factor) = Cable A (Attenuator, Applied only when it was used externally)



#### Measurement Instrument Setting for Radiated Emission Measurements.

The radiated emission was tested according to the section 6.3, 6.4, 6.5 and 6.6 of the ANSI C63.10-2013 with following settings.

#### Peak Measurement

RBW = As specified in below table, VBW  $\geq$  3 x RBW, Sweep = Auto, Detector = Peak, Trace mode = Max Hold until the trace stabilizes.

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

#### Average Measurement:

- 1. RBW = 1 MHz (unless otherwise specified).
- 2. VBW ≥ 3 x RBW.
- 3. Detector = RMS (Number of points  $\ge 2 \times \text{Span} / \text{RBW}$ )
- 4. Averaging type = power. (i.e., RMS)
- 5. Sweep time = auto.
- 6. Perform a trace average of at least 100 traces.
- 7. A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
- 1) If power averaging (RMS) mode was used in step 4, then the applicable correction factor is 10 log(1/D), where D is the duty cycle.
- 2) If linear voltage averaging mode was used in step 4, then the applicable correction factor is 20 log(1/D), where D is the duty cycle.
- 3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

Test Mode	Date rate	T <sub>on</sub> (ms)	T <sub>on+off</sub> (ms)	D = T <sub>on</sub> / (T <sub>on+off</sub> )	DCCF = 10 log(1/D) (dB)
TM 1	1 Mbps	12.190	12.310	0.9903	0.05
TM 2	6 Mbps	2.757	2.847	0.9684	0.14
1 101 2	54 Mbps	0.324	0.414	0.7823	1.07
TM 2	MCS 0	2.560	2.650	0.9660	0.16
TM 3	MCS 7	0.292	0.382	0.7644	1.17

#### **Duty Cycle Correction factor**

Note1: Where, T= Transmission duration / D= Duty cycle Note2: Please refer to the appendix I for duty cycle plots.

#### Test Results: Comply

Please refer to next page for data table and the appendix II for worst data plots.



Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
	2388.93	Н	Х	PK	53.75	2.76	N/A	N/A	56.51	74.00	17.49
2412	2389.77	Н	Х	AV	42.83	2.77	N/A	N/A	45.60	54.00	8.40
2412	4824.06	Н	Y	PK	52.20	1.64	N/A	N/A	53.84	74.00	20.16
	4823.92	Н	Y	AV	44.70	1.64	N/A	N/A	46.34	54.00	7.66
0.407	4873.99	Н	Y	PK	51.31	1.62	N/A	N/A	52.93	74.00	21.07
2437	4873.85	Н	Y	AV	42.17	1.62	N/A	N/A	43.79	54.00	10.21
	2484.99	Н	Х	PK	53.20	3.27	N/A	N/A	56.47	74.00	17.53
2462	2483.59	Н	Х	AV	42.54	3.26	N/A	N/A	45.80	54.00	8.20
2462	4924.06	Н	Y	PK	51.61	1.68	N/A	N/A	53.29	74.00	20.71
	4923.95	Н	Y	AV	42.45	1.68	N/A	N/A	44.13	54.00	9.87
	2485.00	Н	Х	PK	52.64	3.27	N/A	N/A	55.91	74.00	18.09
0.470	2483.57	Н	Х	AV	41.85	3.26	N/A	N/A	45.11	54.00	8.89
2472	4944.25	н	Y	PK	50.92	1.73	N/A	N/A	52.65	74.00	21.35
	4944.09	Н	Y	AV	39.16	1.73	N/A	N/A	40.89	54.00	13.11

#### Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 1

#### Note.

- 1. The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- 2. Sample Calculation.

Margin = Limit – Result / Result = Reading + T.F+ DCCF + DCF / T.F = AF + CL – AG Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

#### 3. Information of Distance Factor.

For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.

- Calculation of distance factor = 20 log( applied distance / required distance ) = 20 log( 1 m / 3 m ) = -9.54 dB



Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
	2389.84	Н	Х	PK	61.46	2.77	N/A	N/A	64.23	74.00	9.77
2412	2389.72	Н	Х	AV	45.06	2.77	1.07	N/A	48.90	54.00	5.10
2412	4824.23	Н	Y	PK	50.46	1.64	N/A	N/A	52.10	74.00	21.90
	4823.88	Н	Y	AV	39.64	1.64	1.07	N/A	42.35	54.00	11.65
0.407	4873.48	Н	Y	PK	50.03	1.62	N/A	N/A	51.65	74.00	22.35
2437	4873.56	Н	Y	AV	39.57	1.62	1.07	N/A	42.26	54.00	11.74
	2484.99	Н	Х	PK	56.72	3.27	N/A	N/A	59.99	74.00	14.01
2462	2483.85	Н	Х	AV	43.81	3.26	1.07	N/A	48.14	54.00	5.86
2402	4923.75	Н	Y	PK	50.44	1.68	N/A	N/A	52.12	74.00	21.88
	4924.14	Н	Y	AV	39.15	1.68	1.07	N/A	41.90	54.00	12.10
	2483.65	Н	Х	PK	52.01	3.26	N/A	N/A	55.27	74.00	18.73
2472	2483.90	Н	Х	AV	41.67	3.27	0.14	N/A	45.08	54.00	8.92
2412	4943.93	Н	Y	PK	49.63	1.73	N/A	N/A	51.36	74.00	22.64
	4943.77	Н	Y	AV	39.20	1.73	0.14	N/A	41.07	54.00	12.93

#### Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 2

#### Note.

- 1. The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- 2. Sample Calculation.

Margin = Limit – Result / Result = Reading + T.F + DCCF + DCF / T.F = AF + CL – AG Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

#### 3. Information of Distance Factor.

For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.

- Calculation of distance factor = 20 log( applied distance / required distance ) = 20 log( 1 m / 3 m ) = -9.54 dB



Tested Frequency	Frequency (MHz)	ANT Pol	EUT Position (Axis)	Detector Mode	Reading (dBuV)	T.F (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
	2388.93	Н	Х	PK	56.62	2.76	N/A	N/A	59.38	74.00	14.62
2412	2389.74	Н	Х	AV	43.55	2.77	1.17	N/A	47.49	54.00	6.51
2412	4823.27	Н	Y	PK	50.26	1.64	N/A	N/A	51.90	74.00	22.10
	4823.34	Н	Y	AV	39.50	1.64	1.17	N/A	42.31	54.00	11.69
0407	4874.37	Н	Y	PK	50.61	1.62	N/A	N/A	52.23	74.00	21.77
2437	4873.74	Н	Y	AV	39.47	1.62	1.17	N/A	42.26	54.00	11.74
	2483.78	н	Х	PK	55.03	3.26	N/A	N/A	58.29	74.00	15.71
2462	2483.99	Н	Х	AV	43.26	3.27	1.17	N/A	47.70	54.00	6.30
2402	4924.24	Н	Y	PK	49.89	1.68	N/A	N/A	51.57	74.00	22.43
	4924.45	Н	Y	AV	39.10	1.68	1.17	N/A	41.95	54.00	12.05
	2484.27	Н	Х	PK	53.76	3.27	N/A	N/A	57.03	74.00	16.97
2472	2483.85	Н	Х	AV	42.37	3.26	0.16	N/A	45.79	54.00	8.21
2412	4943.96	Н	Y	PK	49.51	1.73	N/A	N/A	51.24	74.00	22.76
	4943.66	Н	Y	AV	39.01	1.73	0.16	N/A	40.90	54.00	13.10

#### Radiated Spurious Emissions data(9 kHz ~ 25 GHz) : TM 3

#### Note.

- 1. The radiated emissions were investigated 9kHz to 25GHz. And no other spurious and harmonic emissions were found above listed frequencies.
- 2. Sample Calculation.

Margin = Limit – Result / Result = Reading + T.F + DCCF + DCF / T.F = AF + CL – AG Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

#### 3. Information of Distance Factor.

For finding emissions, the test distance might be reduced from 3m to 1m. In this case, the distance factor(-9.54dB) is applied to the result.

- Calculation of distance factor = 20 log( applied distance / required distance ) = 20 log( 1 m / 3 m ) = -9.54 dB



#### 8.6 Power-line conducted emissions

#### Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network(LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

Frequency Range	Conducted Limit (dBuV)			
(MHz)	Quasi-Peak	Average		
0.15 ~ 0.5	66 to 56 *	56 to 46 *		
0.5 ~ 5	56	46		
5 ~ 30	60	50		

\* Decreases with the logarithm of the frequency

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

#### Test Configuration

See test photographs for the actual connections between EUT and support equipment.

#### Test Procedure

- 1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
- 2. The EUT is connected via LISN to the test power supply.
- 3. The measurement results are obtained as described below:
- 4. Detectors Quasi Peak and Average Detector.

#### Test Results: Comply(Refer to next page.)

The worst data was reported.

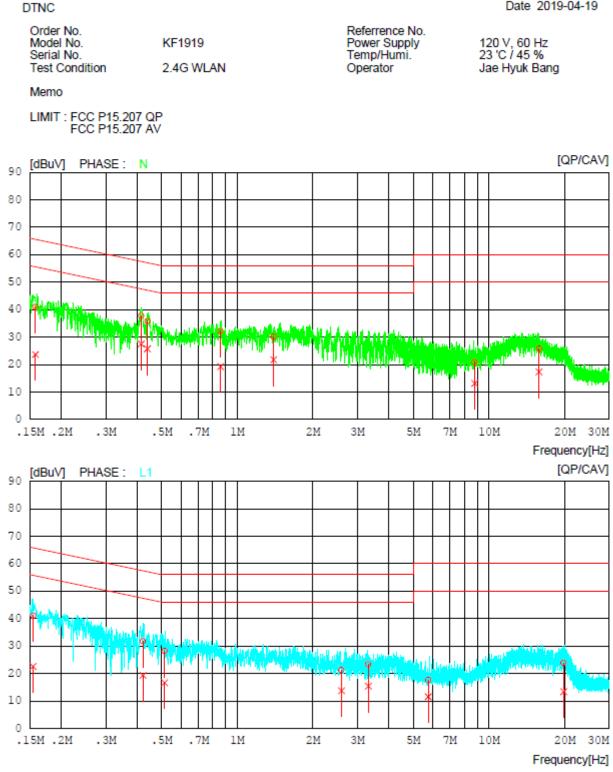
#### RESULT PLOTS

#### AC Line Conducted Emissions (Graph)

Test Mode: TM 2 & 2437 MHz

### Results of Conducted Emission

Date 2019-04-19



#### AC Line Conducted Emissions (List)

Test Mode: TM 2 & 2437 MHz

### Results of Conducted Emission

Date 2019-04-19

Model No. KF1919 P Serial No. Te	eferrence No. ower Supply 120 V, 60 Hz emp/Humi. 23 'C / 45 % perator Jae Hyuk Bang
-------------------------------------	--

Memo

DTNC

LIMIT : FCC P15.207 QP FCC P15.207 AV

NC	) FREQ [MHz]	READING QP CAV [dBuV][dBuV]	C.FACTOR ] [dB]	RESULT QP CAV [dBuV][dBuV]	QP	MIT CAV ][dBuV]	MARGIN QP CAV [dBuV][dBuV	PHASE ]
1		30.9813.71 27.7917.56	9.94	40.9223.65 37.7427.51			24.6631.93 19.8020.03	N
3		25.8215.83	9.95 9.95	35.77 25.78			21.2921.28	N N
4 5		22.21 9.32 20.1711.80	9.97 9.99	32.1819.29			23.8226.71 25.8424.21	N N
6			10.30	20.8213.14	60.00		39.18 36.86	N
7		15.33 6.80 31.04 12.53	10.50 9.94	25.8317.30	60.00 65.74		34.17 32.70 24.76 33.27	N Ll
9	0.42207	21.69 9.34	9.95	31.64 19.29	57.41	47.41	25.77 28.12	L1
10		18.15 6.64 11.19 3.58	9.95 10.04	28.1016.59			27.90 29.41 34.77 32.38	L1 L1
12	3.32120	13.15 5.25	10.08	23.2315.33	56.00	46.00	32.77 30.67	L1
13 14	5.75140 19.85000	7.44 1.30 13.26 2.75	10.18 10.53	17.6211.48 23.7913.28	60.00 60.00		42.38 38.52 36.21 36.72	L1 L1

### 9. LIST OF TEST EQUIPMENT

Туре	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	18/12/19	19/12/19	MY50410357
Spectrum Analyzer	yzer Agilent Technologies N9020A 18/12/19		19/12/19	MY48011700	
C Power Supply Agilent Technologies		66332A	18/07/02	19/07/02	MY43000211
Multimeter	FLUKE	17B	18/12/18	19/12/18	26030065WS
Signal Generator	Rohde Schwarz	SMBV100A	18/12/19	19/12/19	255571
Signal Generator	ANRITSU	MG3695C	18/12/10	19/12/10	173501
Thermohygrometer	BODYCOM	BJ5478	18/12/27	19/12/27	120612-1
Thermohygrometer	SATO	PC-5000TRH-II	18/07/18	19/07/18	N/A
Thermohygrometer	BODYCOM	BJ5478	18/07/09	19/07/09	N/A
HYGROMETER	TESTO	608-H1	19/01/31	20/01/31	34862883
Loop Antenna	Schwarzbeck	FMZB1513	18/01/30	20/01/30	1513-128
BILOG ANTENNA	Schwarzbeck	VULB 9160	18/07/13	20/07/13	3359
Horn Antenna	ETS-Lindgren	3115	19/01/11	21/01/11	9202-3820
Horn Antenna	Schwarzbeck	BBHA 9120C	17/12/04	19/12/04	9120C-561
Horn Antenna	A.H.Systems Inc.	SAS-574	17/07/31	19/07/31	155
PreAmplifier	tsj	MLA-0118-J01-45	18/12/19	19/12/19	17138
PreAmplifier	nplifier tsj		18/07/06	19/07/06	16966-10728
PreAmplifier	tsj	MLA-10K01-B01-27	18/10/31	19/10/31	2005354
Attenuator	SMAJK	SMAJK-2-3	18/07/02	19/07/02	3
ttenuator Aeroflex/Weinschel		56-3	18/07/02 19/07/02		Y2370
Attenuator	SRTechnology	F01-B0606-01	18/07/02	19/07/02	13092403
Attenuator	Hefei Shunze	SS5T2.92-10-40	18/07/03	19/07/03	16012202
Attenuator	SMAJK	SMAJK-2-3	18/07/04	19/07/04	4
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	18/07/03	19/07/03	3
High Pass Filter	Wainwright Instruments	WHKX12-935-1000- 15000-40SS	18/07/02	19/07/02	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300- 18000-60SS	18/07/02	19/07/02	1
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A MA2411B	18/12/19	19/12/19	1338004 1306053
EMI Receiver	ROHDE&SCHWARZ	ESW44	18/08/06	19/08/06	101645
EMI Test Receiver	Rohde Schwarz	ESCI7	19/01/30	20/01/30	100910
PULSE LIMITER	Rohde Schwarz	ESH3-Z2	18/09/27	19/09/27	101333
LISN	SCHWARZBECK	NNLK 8121	19/03/19	20/03/19	06183
Cable	HUBER+SUHNER	SUCOFLEX	18/12/21	19/12/21	C-1
Cable	HUBER+SUHNER	SUCOFLEX	18/12/21	19/12/21	C-2
Cable	HUBER+SUHNER	SUCOFLEX	18/12/21	19/12/21	C-3
Cable	HUBER+SUHNER	SUCOFLEX	18/12/21	19/12/21	C-4
Cable	Junkosha	MWX241	18/06/25	19/06/25	G-04
Cable	Junkosha	MWX241	18/06/25	19/06/25	G-07
Cable	DT&C	Cable	18/07/06	19/07/06	G-13
Cable DT&C		Cable	18/07/06	19/07/06	G-14
Cable	HUBER+SUHNER	SUCOFLEX 104	18/07/06	19/07/06	G-15
Cable	DT&C	CABLE	18/07/05	19/07/05	RF-82

Note 1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017 Note 2: The cable is not a regular calibration item, so it has been calibrated by DT & C itself.

#### **APPENDIX I**

#### Duty cycle plots

#### Test Procedure

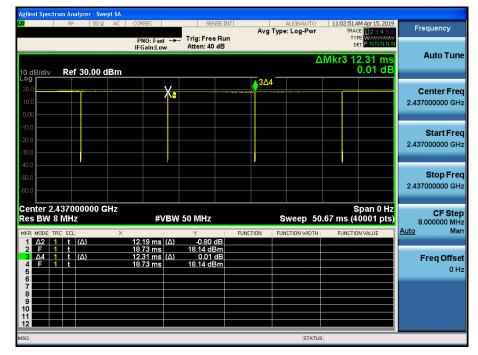
#### Duty Cycle was measured using section 6.0 b) of KDB558074 D01v05r02 :

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW  $\geq$  OBW if possible; otherwise, set RBW to the largest available value. Set VBW  $\geq$  RBW. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T  $\leq$  16.7 microseconds.)

**Duty Cycle** 

TM 1 (1Mbps) & 2437



TRF-RF-236(04)170516

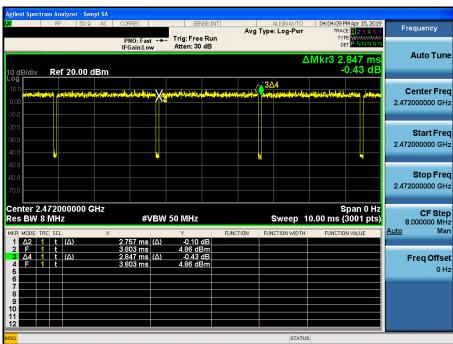
# **Dt&C**

#### TM 2 (54Mbps) & 2437

#### **Duty Cycle**

Agilent Spectrum Analyzer					
LXI RF	50 Ω AC CORREC	SENSE:I	Avg Type: Log-F	Wr TRACE	Frequency
10 dB/div Ref 30.	PNO: Fa: IFGain:Lo .00 dBm		n	ΔMkr3 413.5 μ 0.00 d	S Auto Tune
20.0 20.0 10.0 10.0 10.0 10.0 10.0 10.0	n të filosoji i parti të	X			2.437000000 GHz
-10.0 -20.0 -30.0					Start Freq 2.437000000 GHz
-60.0					<b>Stop Freq</b> 2.437000000 GHz
Center 2.4370000 Res BW 8 MHz		VBW 50 MHz Y (∆) -1.16 dB	Swee	Span 0 H p 1.500 ms (3001 pt IDTH FUNCTION VALUE	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	595.5 μs 595.5 μs 413.5 μs 595.5 μs	16.66 dBm (Δ) 0.00 dB			Freq Offset 0 Hz
8 9 10 11 12					
MSG			s	TATUS	

#### TM 2 (6Mbps) & 2472

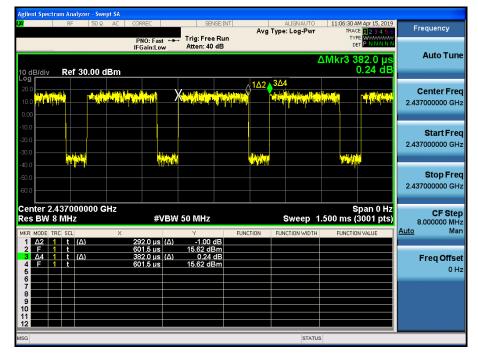


#### **Duty Cycle**

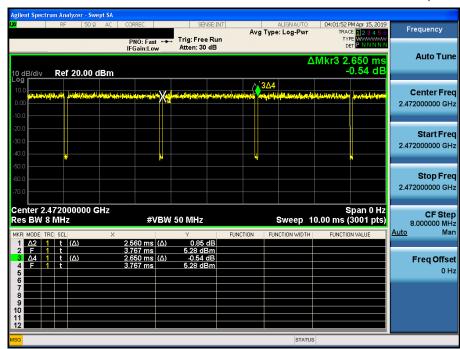
## **T**Dt&C

#### TM 3 (MCS7) & 2437

#### Duty Cycle



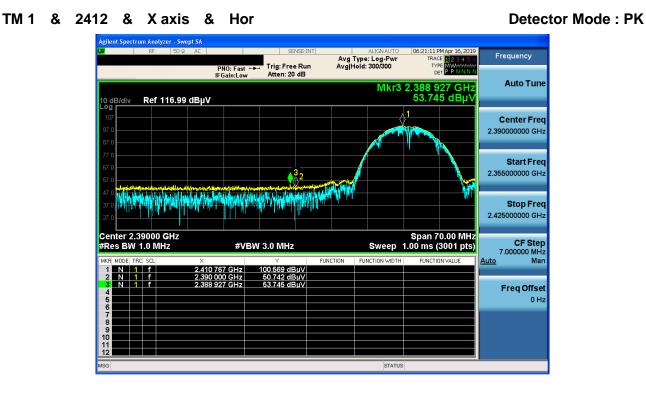
#### TM 3 (MCS0) & 2472



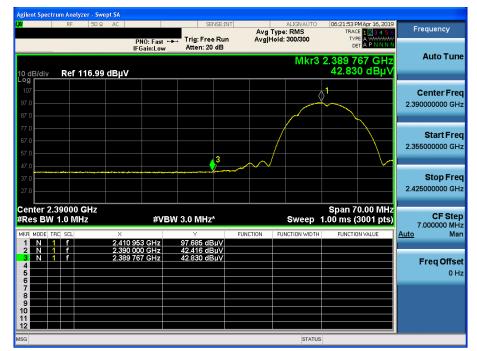
#### Duty Cycle

#### **APPENDIX II**

#### **Unwanted Emissions (Radiated) Test Plot**

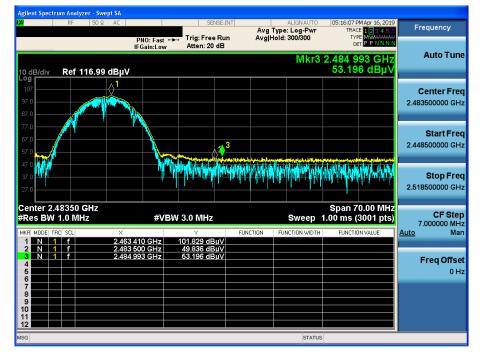


#### TM 1 & 2412 & X axis & Hor

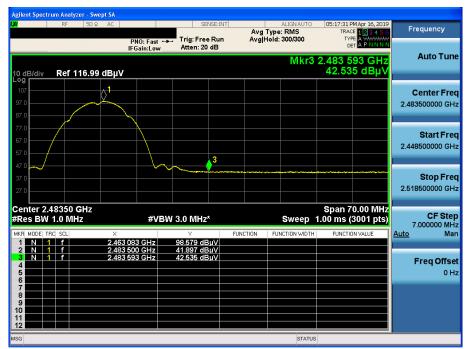




#### TM 1 & 2462 & X axis & Hor

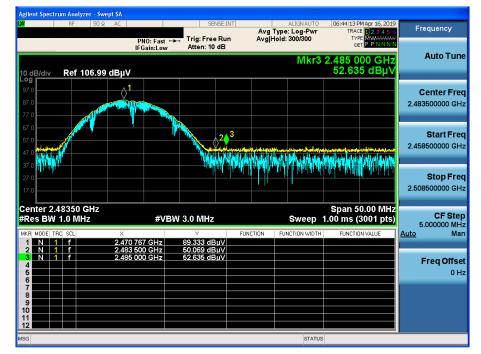


#### TM 1 & 2462 & X axis & Hor





#### TM 1 & 2472 & X axis & Hor



#### TM 1 & 2472 & X axis & Hor

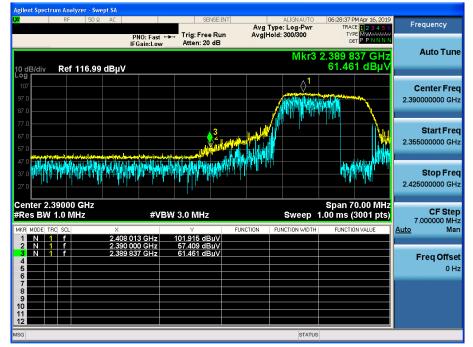
#### yzer - Swept SA Frequency Avg Type: RMS Avg|Hold: 300/300 1234 A <del>11111</del> A P N N Trig: Free Run Atten: 10 dB PNO: Fast 🔸 TYPE DET Auto Tune Mkr3 2.483 567 GH 41.847 dBµ Ref 106.99 dBµV I0 dB/div **Center Freq** $\Diamond^{1}$ 2.483500000 GHz Start Freq 2.458500000 GHz 3 Stop Freq 2.508500000 GHz Center 2.48350 GHz #Res BW 1.0 MHz Span 50.00 MHz 1.00 ms (3001 pts) CF Step 5.000000 MHz Man #VBW 3.0 MHz\* Sweep Auto NN 2.483 500 GHz 2.483 567 GHz 41.154 dBµ **Freq Offset** 0 Hz STATUS

#### **Detector Mode : AV**

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#### TM 2 & 2412 & X axis & Hor



#### TM 2 & 2412 & X axis & Hor

#### m Analyzer - Swept SA Frequency Avg Type: RMS Avg|Hold: 300/300 Trig: Free Run Atten: 20 dB PNO: Fast 🔸 Mkr3 2.389 720 GH: 45.059 dBµ\ Auto Tune Ref 116.99 dBµV 10 dB/div -og **Center Freq** 2.39000000 GHz Start Freq 2.355000000 GHz 3 Stop Freq 2.425000000 GHz Center 2.39000 GHz #Res BW 1.0 MHz Span 70.00 MHz 1.00 ms (3001 pts) CF Step 7.000000 MHz Man #VBW 3.0 MHz\* Sweep Auto Ň 2 389 720 GHz 45 059 dBu **Freq Offset** 0 Hz STATUS

#### **Detector Mode : AV**

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#### TM 2 & 2462 & X axis & Hor

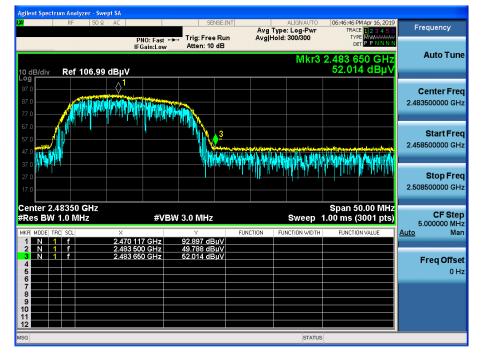


#### TM 2 & 2462 & X axis & Hor





#### TM 2 & 2472 & X axis & Hor



#### TM 2 & 2472 & X axis & Hor

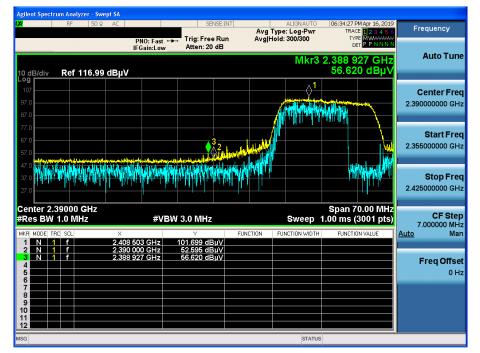
#### yzer - Swept SA Frequency Avg Type: RMS Avg|Hold: 300/300 TYPE A WWWW Trig: Free Run Atten: 10 dB PNO: Fast +++ IFGain:Low Auto Tune Mkr3 2.483 900 GH: 41.671 dBµ\ Ref 106.99 dBµV I0 dB/div **Center Freq** 2.483500000 GHz Start Freq 2.458500000 GHz 3 Stop Freq 2.508500000 GHz Center 2.48350 GHz #Res BW 1.0 MHz Span 50.00 MHz 1.00 ms (3001 pts) CF Step 5.000000 MHz Man #VBW 3.0 MHz\* Sweep Auto 2.483 500 GHz 2.483 900 GHz 41.646 dBµ Ň **Freq Offset** 0 Hz

#### **Detector Mode : AV**

MSG



#### TM 3 & 2412 & X axis & Hor

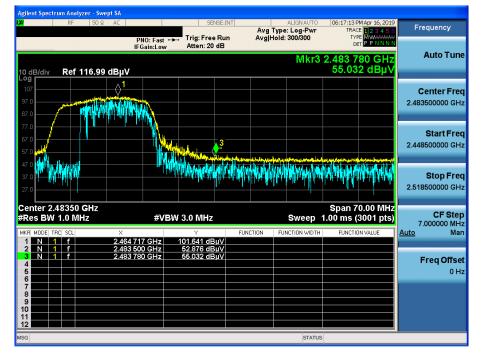


#### TM 3 & 2412 & X axis & Hor

#### ım Analyzer - Swept SA Frequency Avg Type: RMS Avg|Hold: 300/300 1234 A <del>WWW</del>A Trig: Free Run Atten: 20 dB PNO: Fast 🔸 TYPE DE1 Mkr3 2.389 743 GH: 43.554 dBµ\ Auto Tune Ref 116.99 dBµV 10 dB/div -og **Center Freq** $\Diamond^1$ 2.39000000 GHz Start Freq 2.355000000 GHz Stop Freq 2.425000000 GHz Center 2.39000 GHz #Res BW 1.0 MHz Span 70.00 MHz 1.00 ms (3001 pts) CF Step 7.000000 MHz Man #VBW 3.0 MHz\* Sweep Auto 43.288 dBµ 43.554 dBµ Ň 2 389 743 GH **Freq Offset** 0 Hz STATUS



#### TM 3 & 2462 & X axis & Hor

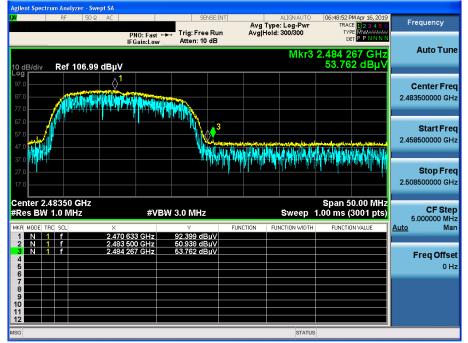


#### TM 3 & 2462 & X axis & Hor

#### yzer - Swept SA Frequency Avg Type: RMS Avg|Hold: 300/300 1234 A <del>11111</del> A P N N Trig: Free Run Atten: 20 dB TYPE DET PNO: Fast ↔→ IFGain:Low Mkr3 2.483 990 GH: 43.263 dBµ\ Auto Tune Ref 116.99 dBµV 0 dB/div **Center Freq** ∆<mark>1</mark> 2.483500000 GHz Start Freq 2.448500000 GHz 3 Stop Freq 2.518500000 GHz Center 2.48350 GHz #Res BW 1.0 MHz Span 70.00 MHz 1.00 ms (3001 pts) CF Step 7.000000 MHz Man #VBW 3.0 MHz\* Sweep Auto 42.705 dBu 43.263 dBu 2.483 500 GH; 2.483 990 GH; Ň **Freq Offset** 0 Hz STATUS



#### TM 3 & 2472 & X axis & Hor



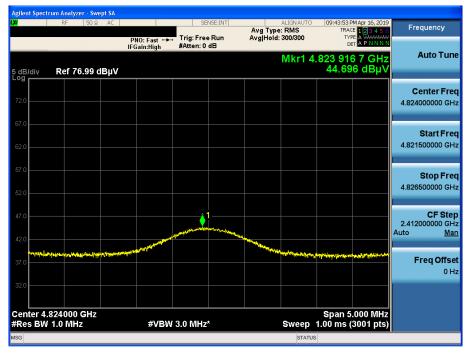
#### TM 3 & 2472 & X axis & Hor

#### yzer - Swept SA Frequency Avg Type: RMS Avg|Hold: 300/300 1234 A <del>100000</del> A P N N Trig: Free Run Atten: 10 dB PNO: Fast +++ IFGain:Low TYPE DET Mkr3 2.483 850 GH: 42.365 dBµ\ Auto Tune I0 dB/div Ref 106.99 dBµV **Center Freq** 0 2.483500000 GHz Start Freq 2.458500000 GHz 3 Stop Freq 2.508500000 GHz Center 2.48350 GHz #Res BW 1.0 MHz Span 50.00 MHz 1.00 ms (3001 pts) CF Step 5.000000 MHz Man #VBW 3.0 MHz\* Sweep Auto NN 2.483 500 GHz 2.483 850 GHz 42.164 dBµ 42.365 dBµ **Freq Offset** 0 Hz STATUS

**Detector Mode : AV** 



#### TM 1 & 2412 & Yaxis & Hor



#### TM 2 & 2412 & Yaxis & Hor

#### nt Spectrum Analyzer - Swept SA Frequency Avg Type: RMS Avg|Hold: 300/300 TYPE A WWW PNO: Fast +++ Trig: Free Run IFGain:High #Atten: 0 dB Mkr1 4.823 881 7 GHz 39.638 dBµ\ Auto Tune Ref 76.99 dBµV 5 dB/div Log **Center Freq** 4.824000000 GHz Start Freq 4.821500000 GHz Stop Freq 4.826500000 GHz **CF Step** 2.412000000 GHz Auto <u>Man</u> Â **Freq Offset** 0 Hz Center 4.824000 GHz #Res BW 1.0 MHz Span 5.000 MHz Sweep 1.00 ms (3001 pts) #VBW 3.0 MHz\*



#### Detector Mode : AV

#### TM 3 & 2412 & Yaxis & Hor

