

Figure 6-3 Out-of-band Emission in 300kHz or 3GHz Range – 2 Carriers Narrow Band Signal Applied on First or Last Channel in the Appropriate Operating Band











Figure 6-4 Out-of-band Emission in 300kHz or 3GHz Range – 2 Carriers Wide Band Signal Applied on First or Last Channel in the Appropriate Operating Band

2 Carriers Wide Band Signal - No	minal	2 Carriers Wide Band Signal - AGC
	Banc	1 700
Applied Systems Jankers. Sweg 34 Since 1071 ALEARATO 102305 AMMo 20, 2005 Genter Freq 727.850000 MHz Trig Free Amer 34 dB Auger 34 dB Auger 44, 2005 Weiger Free Res Trig Free Amer 34 dB Auger 34 dB Auger 44, 2005	Frequency	Name Name <th< th=""></th<>
Ref Offset 44.1 dB Mkr1 727.996 1 MHz 10 dB/div Ref 43.00 dBm -20.708 dBm	Auto Tune	Ref Offset 41.1 dB Mkr1 727.999 4 MHz 10 dB/d/v Ref 43.00 dBm -21.672 dBm
Cog	Center Freq 727.850000 MHz	Log Center Freq 727 850000 MHz
	Start Freq 727.700000 MHz	100 700 470 470 470 470 470 470 470 470 4
270 20 20 20 20 20 20 20 20 20 20 20 20 20	Stop Freq 728.00000 MH2	2 0 Stop Freq 2 0 Control Con
Start 727.7000 MHz Stop 728.0000 MHz #Res BW 100 kHz #VBW 300 kHz* Sweep 1.000 ms (1001 pts) Ext tool if to 201 x Outcome Generation of Control on the Contr	CF Step 30.000 kHa Auto Man	Start 727.7000 MHz #VBW 300 kHz* Sweep 1.000 ms (1001 pts) #Res 5W 100 kHz #VBW 300 kHz* Sweep 1.000 ms (1001 pts) Explanation (1001 pts) Auto Man
	Freq Offsel 0 Hz	N 1 f 727.999.4 MHz -21.672.dBm 3
¢ 21		11 · · · · · · · · · · · · · · · · · ·











2 Carriers Wide Ba	and Signal - No	inal 2 Carriers Wide Band Signa	l - AGC
Bent Spectrum Analyzer - Swept SA RL S SF SO SA SERSEDIT RL S SF S0 SA SERSEDIT SERSEDIT Zenter Freq 2.156500000 GHz SERSEDIT Trig: Free Run	ALISHAUTO 11:07:42 AMNov 28, 2016 Avg Type: RMS TRACE 123456 Avg1Hold: 100/100 TYPE A MANAGEMENT	Autlent System Analyser. Swed 54 State System RUNANTO (e12) 28 Frequency Center Freq 2.156500000 GHz Max Trig. Free Run Avg Type: RMS Free	MN0/25,2016 RE12.3.4.5.6 Frequency
IFGain:Low Atten: 8 dB Ref Offset 46.4 dB 0 dB/div Ref 43.00 dBm	Mkr1 2.155 500 GHz Band Power -17.711 dBm	Auto Tune Ref Offset 46.4 dB 10 dBidle Ref 43.00 dBm Band Power -15.9	500 GHz 54 dBm
		Center Frec 230 56550000 GH 230 100	Center Freq 2.156500000 GHz
		Start Frec 200	-13.00 dbn 2.155000000 GHz
		Stop Free 5800000 GH2 40 0	Stop Freq 2.158000000 GHz
rt 2.155000 GHz es BW 100 kHz #VBW 300 kHz* M002 M34 Este x y	Stop 2.158000 GHz Sweep 1.000 ms (1001 pts) FUNCTION FUNCTION VALUE	CF Step 300:000 kHz Mar Stop 2.15 Stop 2	8000 GHz (1001 pts) Auto Man
N 1 f 2.155 500 GHz -28.173 dBm Be	and Power 1.000 MHz -17.711 dB	T N f 2.155 500 GHz -25.571 dBm Band Power 1.000 MHz -2 Freq Offset 3 - <	15.954 dB Freq Offset 0 Hz
		ē 7 8 9 9	
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6.3 Spurious Emission

6.3.1 Measurement Configuration

Measurements were performed at narrow band and wide band signal at the lowest, mid, and highest channel within the 700 MHz (728 – 757 MHz), 850 MHz (869 – 894 MHz), PCS (1930-1995 MHz) and AWS (2110-2155 MHz) band.

The spurious emission was measured within 9 kHz to the tenth harmonic of the highest fundamental frequency on each band of EUT, excluding the out-of-band range in the previous section 6.2. Normally the reference band width (RBW) in spurious emission measurement was specified to 100 kHz for the frequency range below 1 GHz and 1 MHz for the frequency range above 1 GHz.

6.3.2 Results

The spurious emission measurement is shown in Figure 6-6 for the four operating bands.

Conclusion:

No spurious emission is above the -13dBm limit.

Note:

Due to the smooth averaging effect of the spectrum analyzer, the emission measured in the specified RBW in the frequency range from upper block edge to 10th harmonics is higher than when the frequency range is zoomed into close by the operating band. See Figure 6-5 for the side to side comparison.

So in the Figure 6-6 the marker was set to 10MHz above the upper edge of the operating band.





Figure 6-5 Averaging Effect of Spectrum Analyzer



Na	arrow Band	Signal			Wide Ba	nd Sign	al	
			Banc	1 700				
Aglent Spectrum Antiyer - Sweet SA R - S - S - SS - SS - SS - SS - SS Center Freq 79,500 kHz PNC: Wid IFGein:Lo	SBNSE:EVT Avg Typ Ie → Trig: Free Run Avg Hold w #Atten:0 dB	ALIGNAUTO 02:03:14 PMNov 28, 2016 e: RMS TRACE 12:3 4 5 6 1: 10/10 TYPE A WWWWW DET A NNNNN MULT 0.000 LLT	Frequency Auto Tune	Agilent Spectrum Analyzer - Swept SA DI RL S PF SOCALC Center Freq 79.500 kHz	SBNSE:DVT PNO: Wide → Trig: Free Run IFGein:Low #Atten: 0 dB	ALISNAUTO Avg Type: RMS Avg Hold: 10/10	02:00:58 PM Nov 28, 2016 TRACE 12:34:5.6 TYPE A WWWW DET A NNNN N	Frequency Auto Tune
Ref Offset 44.1 dB 10 dB/div Ref 20.00 dBm		-37.516 dBm	0	Ref Offset 44.1 dB 10 dB/div Ref 20.00 dBm			-37.776 dBm	0
-10.0		-1500 dbn	79.500 kHz	-10.0			-10:00 oDes	79.500 kHz
-20.0			Start Freq 9.000 kHz	-20.0 -20.0 1				Start Freq 9.000 kHz
40.0 70.0	and a start of the		Stop Freq 150.000 kHz	-50.0 -60.0 -70.0	and a second	anger and a gradient and a	*****************	Stop Freq 150.000 kHz
Start 9.00 kHz #Res BW 1.0 kHz V	BW 100 Hz*	Stop 150.00 kHz Sweep 1.420 s (1001 pts)	CF Step 14.100 kHz uto Man	Start 9.00 kHz #Res BW 1.0 kHz	VBW 100 Hz*	Sweep	Stop 150.00 kHz 1.420 s (1001 pts)	CF Step 14.100 kHz Auto Man
N 1 f 9.000 kHz 2 3 4 5 6 7 8 8	-37.516 dBm	-	Freq Offsel 0 Ha	N 1 f 2 3 4 5 6 7 7 8 9 9	9.141 kHz -37.776 dBm			Freq Offset 0 Hz
11 <		STATUS & DC Counled		11 <	al Contraction	STATUS	> DC Coupled	
Agilent Spectrum Analyzer - Swept SA				Agilent Spectrum Analyzer - Swept SA				
Center Freq 15.075000 MHz PN0: Far IFGain:Lo	trig: Free Run Avg Typ w #Atten: 0 dB	e: RMS TRACE 1 2 3 4 5 6 : 10/10 TYPE A MINN N N	Frequency	Center Freq 15.075000 Mi	PNO: Fast IFGain:Low #Atten: 0 dB	Avg Type: RMS Avg Held: 10/10	TRACE 1 2 3 4 5 6 TYPE A MINININ DET A NINININ	Frequency
Ref Offset 44.1 dB 10 dB/div Ref 20.00 dBm		Mkr1 150 kHz -31.478 dBm		10 dB/div Ref Offset 44.1 dB Ref 20.00 dBm			Mkr1 150 kHz -31.068 dBm	
10.0			Center Freq 15.075000 MHz	10.0			-1900 dBm	Center Freq 15.075000 MHz
-20.0			Start Freq 150.000 kHz	-20.0 -1 				Start Freq 150.000 kHz
-50.0 -60.0 -70.0	······	·····	Stop Freq 30.000000 MHz	-50.0 Work M				Stop Freq 30.000000 MHz
Start 150 kHz #Res BW 10 kHz V	BW 1.0 kHz*	Stop 30.00 MHz Sweep 3.006 s (1001 pts)	CF Step 2.985000 MHz uto Man	Start 150 kHz #Res BW 10 kHz	VBW 1.0 kHz*	Sweep	Stop 30.00 MHz 3.006 s (1001 pts)	CF Step 2.985000 MHz Auto Man
N 1 F 160 kHz 3 4 5 6 7 7 8 9	-31.478 dBm		Freq Offsel 0 Hz	1 N 1 f 3 4 5 6 7 8 9 9	150 kHz -31.068 dBm			Freq Offsel 0 H2
10 11 <	J	STATUS A DC Coupled		10 11 < M50	- E	STATUS	DC Coupled	



Narrow Band Signal		Wide Band Signal	
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TS PP 50 PA AL SUBJECT ALL ALL ALL ALL ALL ALL ALL ALL ALL AL	Frequency	KL S RF 50.0 AC SHOLENT ALIMAND (2011)77/MAY28,200 Center Freq 378.500000 MHz Trig: Free Run Avg Type: RMS TRACE [2.2.45.5 YMC4 Fill Avg	Frequency
Ref Offset 44.1 dB Mkr1 727.682 5 MHz 10 dB/div Ref 20.00 dBm -20.265 dBm	Auto Tune	Ref Offset 4.1 dB Mkr1 726.950 MHz 10 dB/div Ref 20.00 dBm	Auto Tune
	Center Freq 727.350000 MHz		Center Freq 378.500000 MHz
	Start Freq		Start Freq
	Stop Fred	400 500	30.00000 MH2
800	727.700000 MHz	70.0	Stop Freq 727.000000 MH2
Start 727.0000 MHz Stop 727.7000 MHz Stop 727.70	CF Step 70.000 kHz Auto Man	Start 30.0 MHz Stop 727.0 MHz #Res BW 100 kHz VBW 10 kHz* Sweep 702.1 ms (1001 pts) bsg/mod fred sci x Function Vision Participation	CF Step 69.700000 MHz Auto Man
N 1 f 727.682 6 MHz -20.265 dBm	Freq Offset	1 N 1 f 726.950 MHz -18.332 dBm 2 3	FreqOffse
6 6 7	0 Hz	4 5 6	0 Ha
8 9 10		7	
	B 7 6 B 20284		
Agilent Spectrum Analyzer - Swept SA		Agilent Spectrum Analyzer - Swept SA	
Start Freq 757.300000 MHz PRO: Fast to Free Run Fred Free Run Free Run F	Frequency	Center Freq 879.0000000 MHz PN0: Fast -+- PN0: Fast -+- PN0: Fast -+-	Frequency
Ref 0ffset 44.1 dB	Auto Tune	Ref Offset 44.1 dB Mkr1 758.050 MHz	Auto Tune
	Center Freq	10 dB/div Ref 20.00 dBm	Center Freq
0.00	878.650000 MHz		879.00000 MHz
	Start Freq		Start Freq
		400 V V 400	758.00000 MH2
40.0	Stop Freq 1.00000000 GHz	400 700	Stop Freq 1.000000000 GHz
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8 9 10		8 9 10	
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Aglant Spectrum Analyzer - Swept SA		Aglient Spectrum Analyzer - Swept SA 10 RU S RF 50.0 AC SENSE.EVT ALIXYA.UTO (02:01:42PMNov.28.2016	
Center Freq 4.285000000 GHz PR0: Fast Trig: Free Run Avg1ye: RMS TRACE 13.3.45 PR0: Fast Trig: Free Run Avg1ye: RMS TRACE 13.3.45	Frequency	Center Freq 4.285000000 GHz Avg Type: RMS TRACE 10.3.4.5.5 PR0: Fast ++- Trig: Free Run Avg[Held: 10/10 Trig: A wommen IFGenetHigh #Atten: 0.4B	Frequency
Ref Offset 41.1 dB20,109 dBm20,109 dBm	Auto Tune	Ref Offset 44.1 dB Mkr1 2.215 45 GHz 10 dB/div Ref 20.00 dBm -16.190 dBm	Auto Tune
	Center Freq		Center Freq
0.00 -10.0	4.285000000 GHz	10.0	4.285000000 GH2
	Start Freq		Start Freq 1.000000000 GHz
			Stop Erec
60.0	Stop Freq 7.570000000 GH2	700	7.57000000 GHz
Start 1.000 GHz Stop 7.570 GHz ≇Res BW 1.0 MHz VBW 100 kHz* Sweep 66.60 ms (1001 pts)	CF Step 657.000000 MHz	Start 1.000 GHz Stop 7.570 GHz #Res BW 1.0 MHz VBW 100 kHz* Sweep 66.60 ms (100 lpts) 100 MHz VBW 100 kHz* Disket 100 kHz*	CF Step 657.00000 MHz Auto Man
Inter Notice Final Sector 2 V FUNCTION FUNCTION WIDTH FUNCTION VALUE	Man	4 N 1 f 2.215 45 GHz -16.190 dBm	FreqOffee
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Narrow Band Signal		Wide Band Signal
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Center Freq 79.500 kHz Avg Type: RMS Tex PNO: Wide Trig: Free Run Avg Hold: 10/10 DH IFGaint.tow #Atten: 0 dB C	ET A NNNNN	Center Freq 79.500 kHz Avg Type: RMS Texes Trace Run Avg Type: RMS Trace Trace Run Frequency Fre
Ref Offset 439 dB Mkr1 9.5	987 kHz Auto Tune	Ref Offset 439 dB Mkr1 9,141 kHz Auto T
10 alsaiv ker 20.00 alsm -57.6-	Center Eron	
0.00	79.500 kHz	000 79.500
-10.0	-1300 d0n	200
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-600	150.000 kHz	400
Start 9.00 kHz Stop 15	i0.00 kHz CE Step	Start 9.00 kHz CF s
#Res BW 1.0 kHz VBW 100 Hz* Sweep 1.420 s (1001 pts) 14.100 kHz Auto Man	#Res BW 1.0 kHz VBW 100 Hz* Sweep 1.420 s (1001 pts) 14.100
Note into soc. X Y Forward in Forward in		1 N 1 f 9.141 kHz 36.143 dBm 2
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Agilent Spectrum Analyzer - Swept SA	lbied.	Agient Spectrum Analyzer - Swept SA
RL S RF 20 0 ▲ 0C SENSE:EXT ALIGNAUTO 02:43:01 P Center Freq 15.075000 MHz Trac Free Run Avg Type: RMS TRAC	MNov 28, 2016 E 1 2 3 4 5 6 Frequency	RLS #F 50 2≜00 SPISEENT ALISHAUTO (0234:58 PMNov 28, 2016 Center Freq 15.075000 MHz Tric Frag Pure Avg Type: RMS Tric Frag Pure Tric
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Ref Offset 43.9 dB	32 dBm	Ref Offset 43.9 dB 10 dB/div Ref 20.00 dBm -31.508 dBm
	Center Freq	100 Center
10.0	15.075000 MHz	10.00 15.075000
-20.0 1	Start Freq	-200 1 Start
	150.000 kHz	400
500	Stop Freq	Stop F
	30.000000 MHz	700 30.00000
Start 150 kHz Stop 3 #Pae BW 10 kHz VBW 10 kHz* Sween 3 006 c 4	0.00 MHz CF Step	Start 150 kHz Stop 30.00 MHz CF 5
NER MODEL TRIC SOL X Y PUNCTION FUNCTION MIDTH FUNCTION	Auto Man	
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Start Freq 30.000000 MHz Avg Type: RMS TRAC PN0: Fast +++ Trig: Free Run Avg Hold: 10/10 Th Efficiency #Atten: 14 dB 00	ET A NNNNN	Start Freq 30.000000 MHz Avg Type: RMS TRACE 12.3.4.5.6 Frequency PNO: Fast Trig: Free Run Avg Hold: 4/10 TYPE A WANNAW BEGint In the Start Run Avg Hold: 4/10 TYPE A WANNAW BEGint In the Start Run Avg Hold: Avg
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	449.000000 MHz	0:00 Center) 449.00000
-100	-1200 dDn	
	1 Start Freq 30.000000 MHz	- Start F 30.0
40.0		
-60.0	Stop Freq 868.000000 MHz	600 Stop F 868.000000
Start 30.0 MHz Ctop 9	68.0 MHz	Start 30.0 MHz Ston 868.0 MHz
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Aglient Spectrum Analyzer - Swept SA DE TS BF 50 2 AC Start Freq 894.300000 M	PN0: Fast IFGain:Low #Atten: 14 dB	ALIBNAUTO (02-49:10 PMNov 29, 2016 Avg Type: RMS TRACE (12 3 4 5 6 Avg[Heid: 10/10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Frequency	Alginal Spectrum Adaption Seg acc Seg acc Seg acc Seg acc Seg acc Seg acc Fig Seg acc Fig Fig <td< th=""></td<>
10 dB/div Ref 20.00 dBm 10.0		Mkr2 906.03 MHz -28.332 dBm	Center Freq	Ref Could State MKr1 994.30 MHz; 10 dBd/w -20.080 dBm Log -20.080 dBm Log Center Freq
-10.0		-1500 (C)	947.150000 MHz Start Freq	0.00 1
-40.0			894.300000 MHz Stop Freq	80 894,300000 MHz 600 Stop Freq
-70.0 Start 894.30 MHz #Res BW 100 kHz	VBW 10 kHz*	Stop 1.00000 GHz Sween 106 5 ms (1001 nts)	1.00000000 GHz	1.00000000 GHz Start 894.30 MHz #Res BW 100 Hz VBW 10 kHz VBW 10 kHz Sween 106 5 ms (1001 GHz) C F Step
Model Tel: Xi 1 N 1 f 2 N 1 f 3 3 1 f	894.30 MHz -22.716 dBm 906.03 MHz -28.332 dBm	UNCTION FUNCTION WIDTH FUNCTION VALUE	Auto Man Freq Offset	Conceptional and the second seco
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9 10 11 < start 0 0 6 9 0	👔 Agient Spectrum Ans 🏠 Ofique		10 (() (240 PH	10 11 5 10 10 10 10 10 10 10 10 10 10 10 10 10
Aglient Spectrum Analyzer - Swept SA UN TS BE 500 AC Start Freq 1.0000000000	GHz PN0: Fast Trig: Free Run	ALIGNAUTO 02:46:38 FMNov 28, 2016 Avg Type: RMS TRACE 11: 3 4 5 6 Avg[Hold: 10/10 Type A Management	Frequency	Spatial Section Response
10 dB/div Ref Offset 43.9 dB Ref 20.00 dBm	IFGain:Low #Atten: 10 dB	Mkr1 2.643 58 GHz -30.843 dBm	Auto Tune	FG data Attent: 10 dB Mirri 5,962 50 GHz Auto Tune 10 dB/dev Ref 20.00 dBm -29.323 dBm
10.0		-4300 (DA	Center Freq 4.970000000 GHz	100 000 100 100
-20.0			Start Freq 1.000000000 GHz	00 Start Freq 1.00000000 GHz
-70.0			Stop Freq 8.94000000 GHz	Stop Freq Stop Freq 000 0 0
Start 1.000 GHz #Res BW 1.0 MHz	VBW 100 kHz*	Stop 8.940 GHz Sweep 80.53 ms (1001 pts)	CF Step 794.000000 MHz Auto Man	Start 1.000 GHz Stop 8.40 GHz CF Step #Res BW 1.0 MHz VBW 100 kHz* Sweep 8.05.3 ms (1001 bHz) 53.0 ms (1001 bHz) Z2 D00 M01 F03 2 2.0232 dBm Auto Man Auto Man N 1 f. 5692 50 GHz 2.0232 dBm Auto Man
2 3 4 5 6 7			Freq Offset 0 Hz	2
8 9 10 11				
MSG		STATUS	Bar	nd PCS
AgRent Spectrum Analyzer - Swept SA WRLS RF 50 2 DC Center Freq 79.500 kHz	PNO: Wide Trig: Free Run	ALIGNAUTO 02:25:10 FMNov 28, 2016 Avg Type: RMS TRACE []: 3 4 5 6 Avg[Hold: 10/10 Type] A weakweet	Frequency	Applied Symptone Andryce: Swept MA IEX06.071
Ref Offset 46.8 dB 10 dB/div Ref 20.00 dBm	IFGain:Low #Atten: 0 dB	Mkr1 9.423 kHz -34.201 dBm	Auto Tune	If Galactaw Attent 0 dB Attent 0 dB Ref Offset 48:40 0 Mikr1 9,141 kHz Auto Tune Log dB/der Ref 20,00 dBm -34,593 dBm
10.0 0.00 -10.0			Center Freq 79.500 kHz	100 000 100 100 100 100 100 100 100 100
-200 -30.0 -40.0			Start Freq 9.000 kHz	Start Freq 500 t Start Freq 500 tt
-50.0		The she to an a second s	Stop Freq 150.000 kHz	Stop Freq Stop Freq 160 160,000 Hz
Start 9.00 kHz #Res BW 1.0 kHz	VBW 100 Hz*	Stop 150.00 kHz Sweep 1.420 s (1001 pts)	CF Step 14.100 kHz Auto Man	Start 8.00 kHz Stop 150.00 kHz CF Step 14.00 s(100 kHz) Ress BW 1.0 kHz VBW 100 Hz* Sweep 1.420 s(100 kHz) 14.00 s(100 kHz) Ctrops Fig Fig 5 3.453 dBm Auto 3453 dBm Man N f 9.141 kHz 3.453 dBm Man
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Narrow Band Signal		Wide Band Signal	
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Center Freq 15.0/5000 MHz PN0: Fast →→ IFGeint.ow #Atten: 0 dB	NN NN	Center Freq 15.0/5000 MHz PN0: Fast +++ Frig: Free Run Avgilleld: 10/10 1764 560 #Atten: 0 dB 00F[A NNNN	,
Ref Offset 46.8 dB Mkr1 150 kF	Z Auto Tune	Ref Offset 46.8 dB	Auto Tune
	Center Fren		Center Fred
	15.075000 MHz		15.075000 MHz
-100	Start Fren	-000	Start Fred
-30.0 =	150.000 kHz	-300 🗠	150.000 kHz
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400 Wax and a share of stars and st	30.000000 MHz	00- 700	30.000000 MHz
Start 150 kHz Stop 30.00 MI	Iz CF Step	Start 150 kHz Stop 30.00 MHz	CF Step
#Res BW 10 kHz VBW 1.0 kHz* Sweep 3.006 s (1001 pi INVERSIGNED AND A SALE AN	S) 2.985000 MHz Auto Man	#Res BW 10 kHz VBW 1.0 kHz* Sweep 3.006 s (1001 pts)	2.985000 MHz Auto Man
1 N 1 f 150 kHz -28.509 dBm	Eron Offert	1 N 1 f 150 kHz -28.834 dBm	Eron Offert
3 4 6	0 Hz	4	0 Hz
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9 10		9 10 11	
e status 🛦 DC Counled		KS STATUS & DC Counled	
Agilent Spestrum Analyzer - Swept SA		Agilent Spectrum Analyzer - Swept SA	
Center Freq 515.000000 MHz PN/C East -+ Trig: Free Run Augustalia (10/10 PN/C East -+	Frequency	Image: No. 5 FF SD Gr. AC SENSE: DIT AutorAutro Occ15: 35 PMMov 28, 2016 Center Freq 515.000000 MHz Avg Type: RMS Avg Type: RMS TRAC [] : 3 4 5 6 PM/F.Exet	Frequency
IFGain:High #Atten: 0 dB DET[A NNN	Auto Tune	IFGain:High #Atten: 0 dB DET[A NNNN Mkr1 30.00 MHz	Auto Tune
Ref Offiset 45.8 dB 10 dB/div Ref 20.00 dBm -48.847 dB	m	Ref Offiset 46.8 dB 10 dB/div Ref 20.00 dBm -52.748 dBm	
	Center Freq	10.0	Center Freq
10.0		-100	010.00000 minz
	Start Freq	-200	Start Freq
40.0 1	30.00000 MH2	40.0 1	30.000000 MH2
-500	Stop Freq	50.0 60.0	Stop Freq
-70.0	1.00000000 GHZ	-70.0	1.00000000 GHZ
Start 30.0 MHz Stop 1.0000 GF #Res BW 100 kHz VBW 10 kHz* Sweep 977.0 ms (1001 pr	tz CF Step s) 97.000000 MHz	Start 30.0 MHz Stop 1.0000 GHz #Res BW 100 kHz VBW 10 kHz* Sweep 977.0 ms (1001 pts)	CF Step 97.000000 MHz
M29 NODE TRO SCI X Y FUNCTION FUNCTION WOTH FUNCTION WALLE	Auto Man	Main Model Frag Sol, X Y FUNCTION FUNCTION WORTH F	Auto Man
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STATUS		MBG STATUS	
lgPlent Spectrum Analyzer - Swept SA ■ RL S 8F 20 Ω AC SENSE:EIT ALLIGNAUTO (02-25:122 PMNov 28), 22 ■ RL S 100 AC SENSE:EIT ALLIGNAUTO (02-25:122 PMNo	Frequency	Agilent Spectrum Analyzer - Swept 5A 20 RL S RF SO Q AC SENSE:EXT ALIQUAUTO (02:15:16 FMNov 28, 2016) 40 D A SUGA AC SENSE:EXT ALIQUAUTO (02:15:16 FMNov 28, 2016)	Frequency
PN0: Fast ↔ Trig: Free Run Avg Held: 10/10 IFGsainchligh #Atten: 0 dB Der A NN	NN NN	PRO: Fast +++ IFGain:High #Atten: 0 dB	
Ref Offset 46.8 dB Mkr1 1.901 60 GF	Z Auto Tune	Ref Offset 46.8 dB Mkr1 1.903 44 GHz	Auto Tune
	Center Freq		Center Free
	1.46000000 GHz		1.460000000 GHz
	Start From	-100	Start Fred
	1.00000000 GHz		1.000000000 GHz
	Pton Error	500	Stop Ero-
800	1.92000000 GHz	-600 -700	1.92000000 GHz
Start 1.0000 GHz Stop 1.9200 Gł	IZ CF Step	Start 1.0000 GHz Stop 1.9200 GHz	CF Step
#Res BW 1.0 MHz VBW 100 kHz* Sweep 9.333 ms (1001 pt	s) 92.000000 MHz Auto Man	#Res BW 1.0 MHz VBW 100 kHz* Sweep 9.333 ms (1001 pts)	92.000000 MHz Auto Man
1 N 1 f 1.901 60 GHz -33.079 dBm 2		Image: Control of the second	
3 4 6 6	Freq Offset 0 Hz	3 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Freq Offset 0 Hz
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Narrow Band Signal		Wide Band Signal	
Agilent Spectrum Analyzer - Swept SA		Aglient Spectrum Analyzer - Swept SA	
RL 5 PF 200 AC SPREENT ALBANUTO 022556 5MM way 2005 Center Freq 10.977500000 GHz Trig: Free Run Krock fiat ++ Trig: Free Run Krock fiat ++ State	Frequency	W TS IF 100 a. AC ISINGLEDIT ALIZAUTO COLECTION Start Freq 2.005000000 GHz Trig: Free Run Argipte: RWS Trig: Stree RUN Trig: Stree RUN Argipte: RWS Trig: Stree RUN Argipte: RWS Trig: Stree RUN Argipte: RWS Trig: Stree RUN	Frequency
Ref Offset 48.8 dB Mkr1 16.415 GHz 10 dB/dlv Ref 20.00 dBm -30.529 dBm	Auto Tune	Ref Offset 46.8 dB Mkr2 2.005 GHz 10 dB/dW Ref 16.80 dBm -21.963 dBm	Auto Tune
0.00	Center Freq 10.977500000 GHz	6 60 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Center Freq 0.977500000 GHz
-100	Start Freq		StartFreq
400 400	2.00500000 GHz		2.005000000 GHz
40.0 	Stop Freq 19.95000000 GHz	432 1	Stop Freq 9.950000000 GHz
Start 2.005 GHz Stop 19.950 GHz #Res BW 1.0 MHz VBW 100 kHz* Sweep 181.9 ms (1001 pts)	CF Step 1.79450000 GHz Auto Man	Start 2.005 GHz Stop 19.950 GHz #Res BW 1.0 MHz VBW 100 kHz* Sweep 181.9 ms (1001 pts)	CF Step 1.794500000 GHz ito Man
N f 16.415 GHz 30.529 dBm Function Function work Function work N f 16.415 GHz 30.529 dBm Function Function work Function work	Freq Offset 0 Hz	Class (Inde Vine 2012) Class (Inde Vin	Freq Offset 0 Hz
9 10 11			
	Ban	d AWS	
Aglient Spectrum Analyzer - Swept SA III RL S RF 50 0 ▲0C SENSE:BIT ALIGN AUTO 03:09:440 FM Nov 28, 2016	Frequency	Applient Spectrum Analyzer - Swept SA DI R.L. S RF 50.0 a a OC SENSE-EXT ALIBIALITO 03:00:04 FMNov 28, 2010	Frequency
Center Freq 79.500 kHz PHO: Wide -+ IFG-sinct.ow Trig: Free Run Avg Type: RMS Avg Type: RMS	Auto Tune	Center Freq 79.500 kHz PND: Wide	Auto Tune
10 dB/dR Ref 20x0 dBm -35.434 dBm -35.434 dBm	Center Freq	Ref Offset 46 dB	Center Freq
100	79.500 kHz	8 00	79.500 kHz
400 1	Start Freq 9.000 kHz	300 1 300 0 400 0	Start Freq 9.000 kHz
	Stop Freq 150.000 kHz	(00) (00)	Stop Freq
Start 0.00 kHz Stop 150.00 kHz #Res BW 1.0 kHz VBW 100 Hz* Sweep 1.420 s (1001 pts)	CF Step 14.100 kHz	300 Start 9.00 kHz Stop 150.00 kHz ≇Res BW 1.0 kHz VBW 100 Hz* Sweep 1.420 s (1001 pts)	CF Step 14.100 kHz
Constraint x <th< td=""><td>Auto Man Freq Offset</td><td>Non-toxic time (siz) x N Function Function width F</td><td>req Offset</td></th<>	Auto Man Freq Offset	Non-toxic time (siz) x N Function Function width F	req Offset
6 6 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	0 Hz		0 H2
MSG STATUS 🔥 DC Coupled		MSG STATUS A DC Coupled	
a RL S 55 190 5 act 190 5	Frequency	ar RL S # 190 ≜ C S SNEEDT ALIDANTO 0001105 MHR 28,2005 Center Freq 15.075000 MHz PR0: Fast → Trig: Free Run Avg/Heid: 19170 critical Stress C SNEED	Frequency
Ref Offiset 46.4 dB Mkr1 150 kHz 10 dB/d/w Ref 20.00 dBm -28.466 dBm	Auto Tune	Ref Offset 46.4 dB Mkr1 150 kHz 10 dB/div Ref 20.00 dBm -28.787 dBm	Auto Tune
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Center Freq 15.075000 MHz	0.00	Center Freq 15.075000 MHz
900 mm	Start Freq		Start Freq
	Stop Freq		Stop Freq
Story 30.00 MHz	CF Step	Start 150 kHz Stop 30.00 MHz	CF Step
PTCE2 BY TO AT 2 VOTY LUAT?' Sweep 3.000 \$ (1001 pts) C21 0221 022 022 02 2 V 10 012 02 02 02 02 02 02 02 02 02 02 02 02 02	2.985000 MHz Auto Man	Image: Second	2.985000 MHz to Man
3 4 4 6	Freq Offset 0 Hz		Freq Offset 0 Hz
7 8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10		7 9 9	
Ke K		status ▲ DC Coupled	



Narrow Band Signal		Wide Band Signal	
Agilent Spectrum Analyzer - Swept SA		Aglient Spectrum Analyzer - Swept SA	
Center Freq 515.000000 MHz Trig Free Bun Avg Type: RMS TRACE 12 3 4 5 6	Frequency	Center Freq 515.000000 MHz Trig Free Run AvgType: RMS TRACE 12.3456	Frequency
Producting Aktien: 0 dB Ref Offset 46.4 dB Ref Offset 46.4 dB Ref Offset 46.4 dB Ref Offset 46.4 dB	Auto Tune	Proci-tat - SAtten: 0 dB Control - C	Auto Tune
10 dB/dv Ref 20.00 dBm	Center Freq	10 dB/div Ref 20.00 dBm	Center Freq
100	515.000000 MHz		515.000000 MHz
400	30.000000 MHz		30.000000 MHz
	Stop Freq 1.000000000 GHz		Stop Freq 000000000 GHz
Start 30.0 MHz Stop 1.0000 GHz #Res BW 100 kHz VBW 10 kHz* Sweep 977.0 ms (1001 pts)	CF Step 97.000000 MHz	Start 30.0 MHz Stop 1.0000 GHz #Res BW 100 kHz VBW 10 kHz' Sweep 977.0 ms(1001 pts)	CF Step 97.000000 MHz
IDDE IDDE <th< td=""><td>Auto Man</td><td>N 1 f 882.63 MHz 43.692 dBm 2</td><td>o Man</td></th<>	Auto Man	N 1 f 882.63 MHz 43.692 dBm 2	o Man
3 6 6 7 9 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10	Preq Offset 0 Hz		0 Hz
Apilent Spectrum Analyzer - Swept S.M. 2 TS 87 500 AC SERVEEXT 4200140/TO 00:10:531MHzv 28,2026	Frequency	Aginal Spectrum Analyzer - Swept SA 2 15 16 16 100 42 15 15 16 20 20 20 20 20 20 20 20 20 20 20 20 20	Frequency
Start Freq 1.00000000 GHz PN0: Fast	Auto Tune	Start Freq 1.000000000 GHZ Avg Type Rens Avg Type Rens Type Type Rens Type Type Rens Type Type Rens Type Type Rens Avg Type Rens Type Rens Type Type Rens Type Type Type Type Type Type Type Type	Auto Tune
Ref Offset 45.4 dB	Conter Frag	Ref Offset 46.4 B 10 dB/div Ref 20.00 dBm Log	Contor From
0.0 01 001 001 001 001 001 001 001 001 0	1.553500000 GHz		554000000 GHz
	Start Freq 1.00000000 GHz	300 300	Start Freq 000000000 GHz
	Stop Freq 2.107000000 GHz	400 400 770	Stop Freq 108000000 GHz
Start 1.0000 GHz Stop 2.1070 GHz #Res BW 1.0 MHz VBW 100 kHz* Sweep 11.27 ms (100 1pt) 021 0001 IN 1021 VBW0001 INTERNATION INTERNATION	CF Step 110.700000 MHz Auto Man	Start 1.0000 GHz Stop 2.1080 GHz Stop 2.1080 GHz Res BW 1.0 MHz VBW 100 KHz* Sweep 11.27 ms (1001 pts) 1 Carterious Carterious Auto	CF Step 110.800000 MHz 2 Man
2 N 1 f 2.088 2 GHz -16.710 dBm 3 4 5	Freq Offset 0 Hz	2 N 1 f 2.093 4 GHz -18.760 dBm 2 3 3 4	Freq Offset 0 Hz
6 7 8 9			
11 C D D D D D D D D D D D D D D D D D D D	N T C D SISH	11 6 Milo status	
Agilent Spectrum Analyzer - Swept SA		Aglient Spectrum Analyzer - Swept SA	
Start Freq 2.166000000 GHz Avg Type: RMS PHO: Fast	Frequency	Center Freq 11.857500000 GHz PHO: Fast	Frequency
Ref Offset 47.9 dB Mkr1 2.165 GHz 10 dB/div Ref 20.00 dBm -24.344 dBm	Auto Tulle	Ref Offset 47.9 dB Mkr1 2,166 GHz 10 dB/div Ref 20.00 dBm -9.946 dBm	
100	Center Freq 11.858000000 GHz	100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Center Freq 857500000 GHz
	Start Freq 2.166000000 GHz	200	Start Freq 165000000 GHz
	Stop Freq		Stop Freq
Start 2.166 GHz Stop 21.550 GHz Step 21.550 GH	CF Step	700 Stop 21.550 GHz Start 2.165 GHz Stop 21.550 GHz #Res BW 100 kHz* Sween 106.5 me (f001 stell)	CF Step
MORE TIRE SEL X Y PUNCTION PUNCTION WORT PUNCTI	1.938400000 GH2 Auto Man	Image force: X Y Address Addres Addres Addres<	o Man
3 4 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Freq Offsel 0 Hz	3 4 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	PréqOffset 0 Hz
NSO STATUS		K STATUS	



6.4 Intermodulation Emission

6.4.1 Measurement Configuration

Measurements were performed at 3-tone narrow band and wide band signal within the 700 MHz (728 - 757 MHz), 850 MHz (869 - 894 MHz), PCS (1930-1995 MHz) and AWS (2110-2155 MHz) band.

KDB 971168 D03:

The FCC normally requires that the IM test(s) be done with three signals of equal magnitude – at their highest rated output level – for each type of modulation. The signals are spaced so that two are near to each other at one edge of the pass band and the other signal is alone at the other edge of the pass band. This placement will potentially produce both in-band and out-of-band IM products.

The out-of-band emission and spurious emission caused by the intermodulation product is less severe compared to the signal configuration for the measurement shown in the previous emission tests.

Here only in-band intermodulation emission will be reported.

Normally the reference band width (RBW) in spurious emission measurement was specified to 100 kHz for the frequency range below 1 GHz and 1 MHz for the frequency range above 1GHz. And in analogue to out-of-band emission test, the integrated emission power in the specified reference band was measured and captured if a RBW relaxation was applied.

6.4.2 Results – In-band Intermodulation Emission

The measurement trace of intermodulation in-band was shown in Figure 6-7.

Conclusion:

The intermodulation emission was below the -13dBm limit.



Figure 6-7 Screen Captures of Intermodulation Emission





