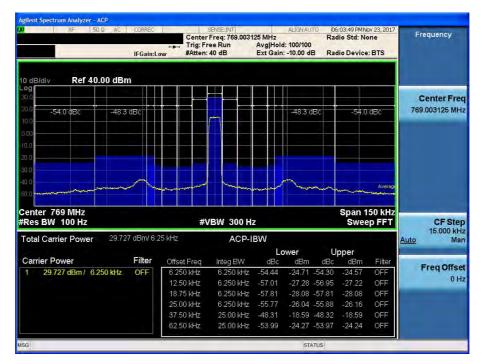
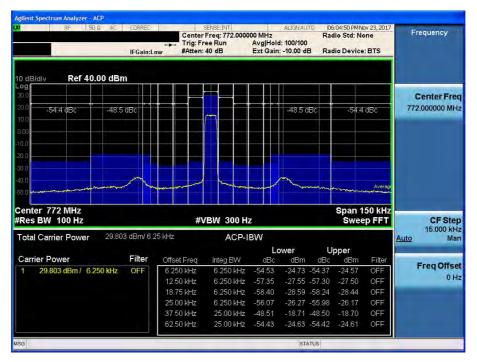


# ACP 700 APCO 25\_Downlink



#### [Downlink - Low, 6.25 kHz (6.25kHz-62.5kHz)]



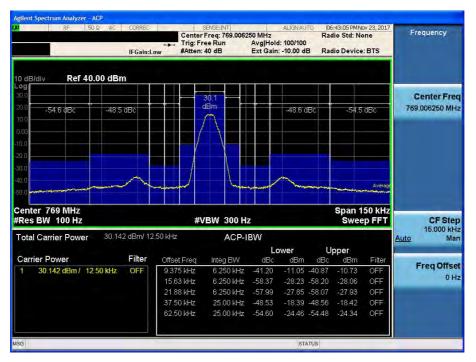




I RF 50 Ω AC CORREC	Center Trig: Fi	SENSEJINT Freq: 774.9968 ree Run 40 dB	AvgHold	Ra 1: 100/100	16:05:19 PMN Idio Std: No Idio Device	one	F	requency
10 dB/div Ref 40.00 dBm								
-og 30.0 20.0 -54.1 dBc -48.3 dBc				-48.2 dBc	-54.3	dBc		Center Fred 1.996875 MH
10.0								
20.0								
30.0								
a second water water the	warman and a second		man salad	and some mark	mm	Average		
50.0	#	/BW 300 H	z	and the second second	Span 1			CF Step
40.0 200		/BW 300 H		and the second sec	Span 1	50 kHz	Auto	CF Step 15.000 kH Mar
500 Center 775 MHz #Res BW 100 Hz Total Carrier Power 30.082 dBm/6.	25 kHz	ACP-I	BW Lo	ower (	Span 1 Swee	50 kHz ep FFT	Auto	15.000 kH
Stone Center 775 MHz Res BW 100 Hz Total Carrier Power 30.082 dBm/ 6: Carrier Power Filter	25 kHz Offset Freq	ACP-I	BW La dBc	ower ( dBm dBc	Span 1 Swee Jpper dBm	50 kHz p FFT Filter		15.000 kH Mai
200 Center 775 MHz Res BW 100 Hz Total Carrier Power 30.082 dBm/6.	25 kHz Offset Freq 6.250 kHz	ACP-I Integ BW 6.250 kHz	BW Lc dBc -54.50	ower ( dBm dBc -24.42 -54.10	Span 1 Swee Jpper dBm -24.01	50 kHz p FFT Filter OFF		15.000 kH Mar Freq Offse
200 Center 775 MHz Ares BW 100 Hz Total Carrier Power 30.082 dBm/ 6: Carrier Power Filter	25 kHz Offset Freq 6.250 kHz 12.50 kHz	ACP-I Integ BW 6.250 kHz 6.250 kHz	BW dBc -54.50 -57.10	ower ( dBm dBc -24.42 -54.10 -27.02 -57.04	Span 1 Swee Jpper dBm -24.01 -26.96	50 kHz p FFT Filter OFF OFF		15.000 kH Mar Freq Offse
Stone Conterned Total Carrier Power Stone	25 kHz Offset Freq 6.250 kHz 12.50 kHz 18.75 kHz	ACP-1 Integ BW 6.250 kHz 6.250 kHz 6.250 kHz	BW dBc -54.50 -57.10 -57.93	ower ( dBm dBc -24.42 -54.10 -27.02 -57.04 -27.85 -57.71	Span 1 Swee Jpper dBm -24.01 -26.96 -27.62	50 kHz p FFT Filter OFF OFF OFF		15.000 kH Mar Freq Offse
200 Center 775 MHz Ares BW 100 Hz Total Carrier Power 30.082 dBm/ 6: Carrier Power Filter	25 kHz Offset Freq 6.250 kHz 12.50 kHz 18.75 kHz 25.00 kHz	ACP-1 Integ BW 6.250 kHz 6.250 kHz 6.250 kHz 6.250 kHz	BW dBc -54.50 -57.10 -57.93 -55.72	ower U dBm dBc -24.42 -54.10 -27.02 -57.04 -27.85 -57.71 -25.64 -55.75	Span 1 Swee Jpper dBm -24.01 -26.96 -27.62 -25.67	50 KHz p FFT Filter OFF OFF OFF OFF		15.000 kH Mar Freq Offse
Stone Conterned Total Carrier Power Stone	25 kHz Offset Freq 6.250 kHz 12.50 kHz 18.75 kHz	ACP-1 Integ BW 6.250 kHz 6.250 kHz 6.250 kHz	BW dBc -54.50 -57.10 -57.93 -55.72 -48.28	ower ( dBm dBc -24.42 -54.10 -27.02 -57.04 -27.85 -57.71	Span 1 Swee Jpper dBm -24.01 -26.96 -27.62 -25.67 -18.16	50 kHz p FFT Filter OFF OFF OFF		15.000 kH

#### [Downlink – High, 6.25 kHz(6.25kHz-62.5kHz)]

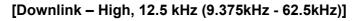


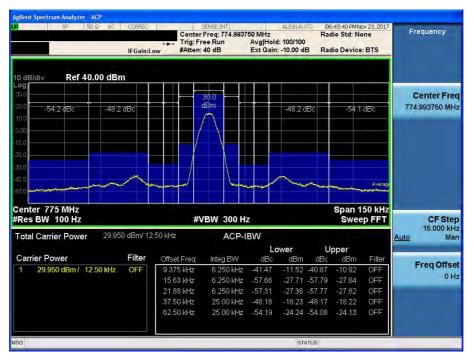




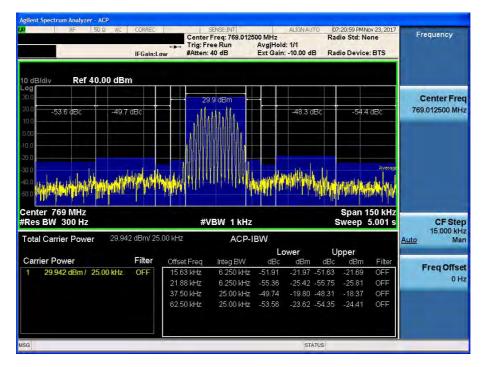
u RF 50Ω AC CORREC IFGain:	Center Trig: F	SENSE:INT Freq: 772,0000 ree Run : 40 dB	AvgHold	Ra 1: 100/100	idio Std: N idio Device	one	Frequency
IO dB/div Ref 40.00 dBm							
-0g 300 20054.3 άΒς48.4 άΒς 100 0.00		30.0 dBm		-48.3 dBc	-54,4	dBc	Center Free 772.000000 MH
10.0 20.0 30.0 40.0				~			
500 manune and a second second	"plane and and	~~~	manan	nimany	minanan	Average Management	
20 0 Center 772 MHz #Res BW 100 Hz	**************************************	VBW 300 H	z			Average Management 150 kHz ep FFT	CF Step
50.0 Center 772 MHz		VBW 300 H ACP-I	BW		Swee	50 kHz	CF Stej 15.000 kH <u>Auto</u> Mai
500 Center 772 MHz #Res BW 100 Hz	2.50 kHz	ACP-I	BW	ower L	Swee	50 kHz	15.000 kH <u>Auto</u> Ma
Center 772 MHz #Res BW 100 Hz Total Carrier Power 29.982 dBm/ 1			IBW Lo		Swee Jpper dBm	150 kHz ep FFT	15.000 kH <u>Auto</u> Mar Freq Offse
Center 772 MHz Res BW 100 Hz Total Carrier Power 29,982 dBm/ 1 Carrier Power Filter	2.50 kHz Offset Freq	ACP-I	IBW Lc dBc	dBm dBc	Swee Jpper dBm -10.24	150 kHz ep FFT	15.000 kH <u>Auto</u> Ma Freq Offse
Son Device T72 MHz       #Res BW 100 Hz       Total Carrier Power     29,982 dBm/1       Carrier Power     Filter	2.50 kHz Offset Freq 9.375 kHz	ACP-I Integ BW 6.250 kHz	IBW Lc dBc -40.90	dBm dBc -10.91 -40.22	Swee Jpper dBm -10.24 -27.66	150 kHz ep FFT Filter OFF	15.000 kH <u>Auto</u> Ma Freq Offse
Son Device T72 MHz       #Res BW 100 Hz       Total Carrier Power     29,982 dBm/1       Carrier Power     Filter	2,50 kHz Offset Freq 9,375 kHz 15,63 kHz	ACP-I Integ BW 6.250 kHz 6.250 kHz	BW dBc -40.90 -57.83	dBm dBc -10.91 -40.22 -27.85 -57.64	Swee dBm -10.24 -27.66 -27.73	Filter OFF	15.000 kH <u>Auto</u> Ma
Son Device T72 MHz       #Res BW 100 Hz       Total Carrier Power     29,982 dBm/1       Carrier Power     Filter	2.50 kHz Offset Freq 9.375 kHz 15.63 kHz 21.88 kHz	ACP-I Integ BW 6.250 kHz 6.250 kHz 6.250 kHz	BW dBc -40.90 -57.83 -57.73 -48.38	dBm dBc -10.91 -40.22 -27.85 -57.64 -27.75 -57.71	Swee dBm -10.24 -27.66 -27.73 -18.36	Filter OFF OFF OFF	15.000 kH <u>Auto</u> Mar Freq Offse

#### [Downlink – Middle, 12.5 kHz (9.375kHz - 62.5kHz)]



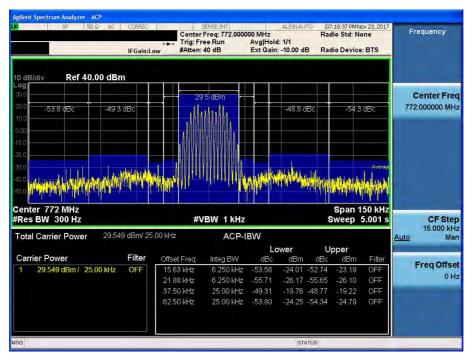






#### [Downlink - Low, 25 kHz (15.625kHz - 62.5kHz)]





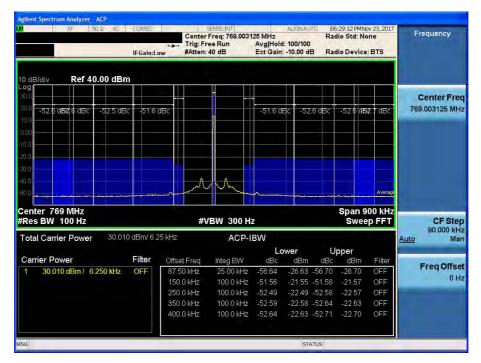


RF 50Ω AC	CORREC		SENSE:INT		ALIGN AU			Nov 23, 2017	E	requency
			Freq: 774.9875 ee Run	500 MHz Avg Hold	1: 1/1	Rac	lio Std: N	lone		requeitcy
	IFGain:L			Ext Gain		B Rad	lio Devic	e: BTS		
0 dB/div Ref 40.00 dB	m									
.og 30.0		30	.1 dBm						3	Center Fre
20.0 -55.2 dBc -48.9	9 dBc	- di	whatte		-49.0 (	1Bc	-55.	1 dBc	77.	4.987500 MH
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0,0				ع رو ک						
20.0					1					
200										
a la	A.D. Arto	ka huluutut		http://	K.B. LAND	البهره		Average		
49.0	n Antika Maria			ar la fille	NMN/M			Average		
	and the second second	<b>hin</b> hill a state of the second se	nn hhhhh <mark>b</mark>	n ny Alfre	NH M	<b>h</b> adhadha	<b>n Na</b> n	Average		
40.0 50.0 <b>WAREN AND AND AND AND AND AND AND AND AND AN</b>	ny Maria			n n n n n n n n n n n n n n n n n n n	<b>Nin Ni</b> n	<b>haliy</b> h		150 kHz		
40.0	ay han an a	<b>***</b> ***	/BW 1 kHz	n n n n n n n n n n n n n n n n n n n	n the the test	<b>k/k/k</b>		<b>Willia</b>		CF Step
400 200 <b> </b>	64 dBm/ 25		/BW 1 kHz ACP-I		n in the second s	<b>W/W</b>		150 kHz	Auto	CF Ster 15.000 kH Mar
200 Center 775 MHz Res BW 300 Hz Total Carrier Power 30.06		.00 kHz	ACP-I	IBW Lo	wer	U	weep	150 kHz 5.001 s	Auto	15.000 kH
Res BW 300 Hz Cotal Carrier Power 30.00 Carrier Power	Filter	.00 KHz Offset Freq	ACP-I	IBW La	dBm	U dBc	pper dBm	150 kHz 5.001 s Filter		15.000 kH Ma
Center 775 MHz Res BW 300 Hz Total Carrier Power 30.06		.00 kHz Offset Freq 15.63 kHz	ACP-I Integ BW 6.250 kHz	IBW Lc dBc -52.91	dBm -22.85	U dBc -50.47	pper dBm -20.41	150 kHz 5.001 s Filter OFF		15.000 kH Ma Freq Offse
200 Cerrier Power	Filter	.00 kHz Offset Freq 15.63 kHz 21.88 kHz	ACP-I Integ BW 6.250 kHz 6.250 kHz	BW dBc -52.91 -56.10	dBm -22.85 -26.03	U dBc -50.47 -56.20	pper dBm -20.41 -26.14	150 kHz 5.001 s Filter OFF OFF		15.000 kH Ma Freq Offse
40 0 50 0 Center 775 MHz FRes BW 300 Hz Total Carrier Power 30.06 Carrier Power	Filter	.00 kHz Offset Freq 15.63 kHz 21.88 kHz .37.50 kHz	ACP-1 Integ BW 6.250 kHz 6.250 kHz 25.00 kHz	BW dBc -52.91 -56.10 -48.89	dBm -22.85 -26.03 -18.82	U dBc -50.47 -56.20 -49.00	pper dBm -20.41 -26.14 -18.93	Filter OFF OFF OFF		15.000 kH Ma Freq Offse
200 Cerrier Power	Filter	.00 kHz Offset Freq 15.63 kHz 21.88 kHz	ACP-1 Integ BW 6.250 kHz 6.250 kHz 25.00 kHz	BW dBc -52.91 -56.10 -48.89	dBm -22.85 -26.03	U dBc -50.47 -56.20 -49.00	pper dBm -20.41 -26.14	150 kHz 5.001 s Filter OFF OFF		15.000 kH Ma Freq Offs(
Res BW 300 Hz Cotal Carrier Power 30.00 Carrier Power	Filter	.00 kHz Offset Freq 15.63 kHz 21.88 kHz .37.50 kHz	ACP-1 Integ BW 6.250 kHz 6.250 kHz 25.00 kHz	BW dBc -52.91 -56.10 -48.89	dBm -22.85 -26.03 -18.82	U dBc -50.47 -56.20 -49.00	pper dBm -20.41 -26.14 -18.93	Filter OFF OFF OFF		15.000 kH Ma

# [Downlink – High, 25 kHz (15.625kHz - 62.5kHz)]

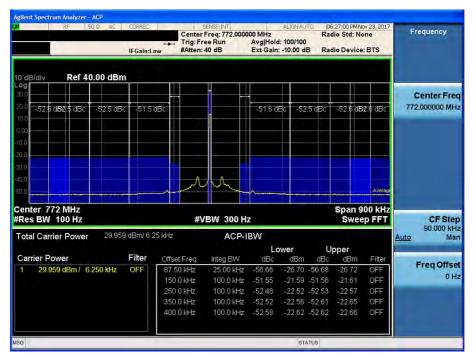


# 700 APCO 25\_Downlink



#### [Downlink - Low, 6.25 kHz (87.5kHz-400kHz)]

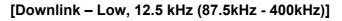


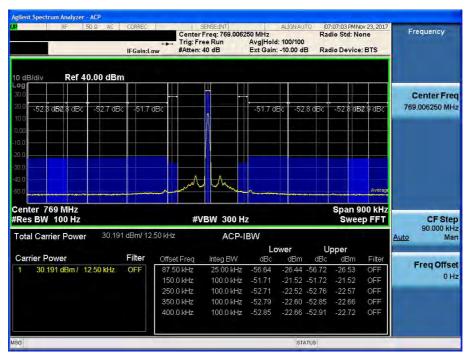




	CORREC		SENSE:INT Inter Freq: 774.990 ig: Free Run	875 MHz AvgHold	ALIGN AU	Ra	5:30:40 PM dio Std:	MNov 23, 2013 None	F	requency
	IFGain:Lo	ow #A	tten: 40 dB	Ext Gain	: -10.00 d	B Ra	dio Devi	ice: BTS		
10 dB/div Ref 40.00 dBm			11 1	11						_
20.0 52.8 dB2 \$ dBc52.7 dBc	c -51.7 (	dBc		-51.7 d	Bc -52	.8 dBc	-52.8	d <b>B</b> 2.9 dBc		Center Free 4.996875 MH
10.0 0.00										
10.0										
30.0										
40.0 50.0			MA	A				Averag	6	
Center 775 MHz								900 kHz		
<b>#Res BW 100 Hz</b> Total Carrier Power 30.202	2 dBm/ 6.2	25 kHz	#VBW 300 I				Sw	eep FFT	Auto	CF Stej 90.000 kH Ma
	-			Lo	wer		pper		<u>Prato</u>	Inst
	Filter	Offset Fr		dBc	dBm	dBc	dBn			Freq Offse
	OFF	87.50 k	Hz 25.00 kHz			-56.84	-26.6-			OH
Carrier Power 1 30.202 dBm / 6.250 kHz		ALCO ON	1. 100.0111				-21.5	2 OFF		
		150.0 k			-21.50					
		250.0 k	Hz 100.0 kHz	-52.71	-22.51	-52.77	-22.56	6 OFF		
Carrier Power 1 30.202 dBm / 6.250 kHz		2 C C C C C C C C	Hz 100.0 kHz Hz 100.0 kHz	-52.71	-22.51 -22.59			6 OFF 2 OFF		

#### [Downlink - High, 6.25 kHz(87.5kHz-400kHz)]



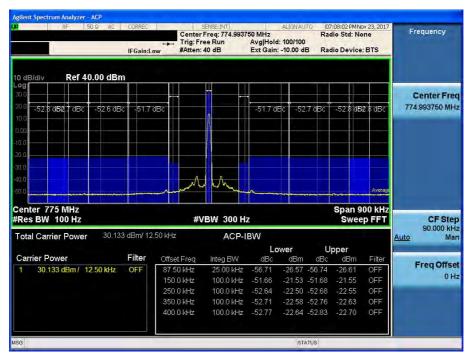




RF 50 Ω AC	CORREC		sense:INT Inter Freq: 772.000		ALIGN AU	Ra	7:05:54 PM dio Std:	4Nov 23, 201 None	7 F	Frequency
	IFGain:Lo		ig: Free Run tten: 40 dB	Avg Hold Ext Gain			dio Devi	ice: BTS	_	
0 dB/div Ref 40.00 dBm	6									
-09 30.0 20.0 -52.7 dB2.7 dBc -52.6 dBc	-51.6 (	iBc		-51.7 d	Bc -52	.7 dBc	-52.7	d <b>B2</b> .8 dBc		Center Free 2.000000 MH
10.0 1.00										
40.0			MM	- n				Avera	5	
Center 772 MHz #Res BW 100 Hz			#VBW 3001	Ηz				900 kH: eep FFT	-	CF Ste
Total Carrier Power 30.101	dBm/ 12.	50 kHz	ACP	-IBW					Auto	90.000 kH Ma
0	Filter		and force with		wer		pper			
Carrier Power 1 30.101 dBm / 12.50 kHz	OFF	Offset Fr 87.50 k		dBc -56.86	dBm	dBc -56.82	dBn			Freq Offse
30.101 dBill/ 12.30 kHz	OFF	07.50 K				-50.62				0 H
		250.0 k				-52.67	-22.56			
		350.0 k				-52.73	-22.63			
		400.0 k		-52.73						

#### [Downlink – Middle, 12.5 kHz(87.5kHz - 400kHz)]



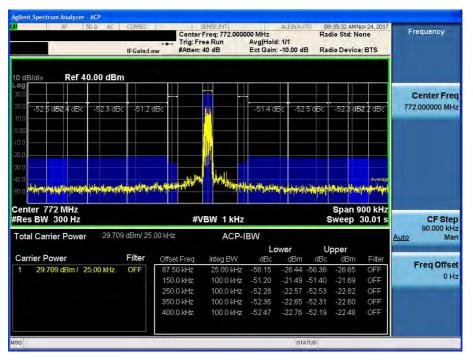




RF 50Ω AC	CORREC		SENSEINT Freq: 769.0120 ree Run		ALIGNAU		1:40:24 AN	Nov 24, 20 None	17 F	requency
	IFGain:L	ow #Atten	: 40 dB	Ext Gain:	-10.00 d	B Rad	lio Devi	ce: BTS		
0 dB/div Ref 40.00 dBi	m									
.og 30.0			+	-					1 3	Center Fre
<sup>20.0</sup> -52.9 dB2.6 dBc -52.5 dE	3c -51.5	dBc	1	-51.7 dB	c -52	.8 dBc	-52.5 0	1 <b>52.6</b> dBo	76	9.012500 MH
0.0										
10.0										
20.0										
30.0										
30.0 40.0		and the second second	A Add Internet					Avera	196	
	ulifer whether	and the second second second	a boot any any any	ting and	<b>krippen</b> apa	eyer Misdeniy	yneigrau	Avera	er M	
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400 500 <b>Weilling Weilling Weilling Weilling</b> Center 769 MHz	alle and the second		VBW 1 KHz		lici (Marija		Span	Avere 900 kH 30.01	M Z	CF Ste
200 weither the state of the st	<b>11 - 11 - 11 - 11 - 11 - 11 - 11 - 11 </b>	#1			Kolomoje		Span	900 kH	M Z	CF Ste 90.000 kH Ma
200 when the market of the mar	66 dBm/ 25	#1	VBW 1 kHz			5	Span	900 kH	M Z S	90.000 kH
100 200 yentler Hourige Tradition Res BW 300 Hz Total Carrier Power 30.06 Carrier Power	66 dBm/ 25 Filter	#1 5.00 kHz Offset Freq	VBW 1 kHz ACP-I	BW Lov dBc	wer dBm	U dBc	Span Sweep pper dBm	900 kH 30.01 Filter	X S Auto	90.000 kH Ma
Res BW 300 Hz	66 dBm/ 25	# 5.00 kHz Offset Freq 87.50 kHz	VBW 1 kHz ACP-I Integ BW 25.00 kHz	BW Lov dBc -56.65	<b>ver</b> dBm -26.58	<b>t</b> U dBc -56.47	Span Sweep pper dBm -26.40	900 kH 30.01 Filter OFF	X S Auto	90.000 kH Ma Freq Offs
100 200 yentler Hourige Tradition Res BW 300 Hz Total Carrier Power 30.06 Carrier Power	66 dBm/ 25 Filter	# 5.00 kHz Offset Freq 87.50 kHz 150.0 kHz	VBW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz	BW Lov dBc -56.65 -51.54	wer dBm -26.58 -21.48	U dBc -56.47 -51.69	Span Sweep pper dBm -26.40 -21.63	900 kH 30.01 Filter OFF OFF	X S Auto	90.000 ki Ma Freq Offs
100 <b>Henry Henry H</b>	66 dBm/ 25 Filter	# 5.00 kHz Offset Freq 87.50 kHz 150.0 kHz 250.0 kHz	VBW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz 100.0 kHz	BW Lov dBc -56.65 -51.54 -52.54	ver dBm -26.58 -21.48 -22.47	U dBc -56.47 -51.69 -52.75	Span Sweep dBm -26.40 -21.63 -22.69	900 kH 30.01 Filter OFF OFF OFF	X S Auto	90.000 kł Ma
100 <b>Henry Henry H</b>	66 dBm/ 25 Filter	# 5.00 kHz Offset Freq 87.50 kHz 150.0 kHz 250.0 kHz 350.0 kHz	VBW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz 100.0 kHz	BW dBc -56.65 -51.54 -52.54 -52.57	ver dBm -26.58 -21.48 -22.47 -22.51	U dBc -56.47 -51.69 -52.75 -52.52	Span Sweep dBm -26.40 -21.63 -22.69 -22.45	900 kH 30.01 Filter OFF OFF OFF	X S Auto	90.000 ki Ma Freq Offs
ion when the provised for the second	66 dBm/ 25 Filter	# 5.00 kHz Offset Freq 87.50 kHz 150.0 kHz 250.0 kHz	VBW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz 100.0 kHz	BW dBc -56.65 -51.54 -52.54 -52.57	ver dBm -26.58 -21.48 -22.47 -22.51	U dBc -56.47 -51.69 -52.75 -52.52	Span Sweep dBm -26.40 -21.63 -22.69	900 kH 30.01 Filter OFF OFF OFF	X S Auto	90.000 ki Ma Freq Offs

#### [Downlink – Low, 25 kHz (87.5kHz - 400kHz)]





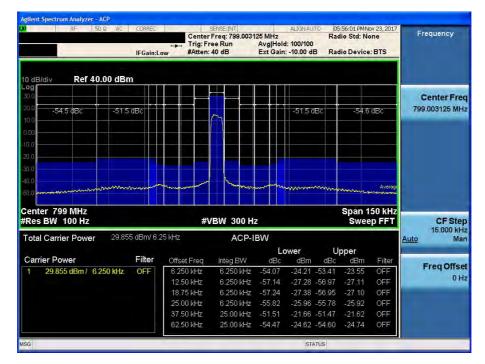


4 RF 50Ω AC	CORREC		SENSE:INT		LIGNAUTO		Nov 24, 2017	Frequency
	IFGain:L	Ti	enter Freq: 774.9870 rig: Free Run Atten: 40 dB	500 MHz Avg Hold: 1. Ext Gain: -1	М	Radio Std: I Radio Devic		requercy
0 dB/div Ref 40.00 dBi	m				I III			
30.0 20.0 -52.4 dB2.4 dBc -52.4 dB	3c -51.3	dBc		-51.4 dBc	-52.4 dB	-52.8 g	1 <b>5</b> 2.2 dBc	Center Fre 774.987500 MH
10.0								
9.00								
20.0								
30.0								
			Julia High			_	Average	
40.0	Notional families	open and the state of the state	NUMA HAAMAA	vyh dilly staturu d	himanya	Hattyligen	Average W <sup>H</sup> MAN	
400 soo hawwana araala ayaayaa	Walesk lands	ayol <b>hiy</b> adiyadi bil			h de provinsion de la companya de la	Span	900 kHz	
400 200 ither the second secon			#VBW 1 kHz		h <mark>in to see</mark> le	Span	elestenskelikterske	CF Ste 90.000 kH
400 200 i hwill ann einryd ywerddw Center 775 MHz #Res BW 300 Hz	<b>) / dia / dia / dia</b>			BW		Span Sweep	900 kHz	CF Ste 90.000 kH
400 500 twelferen of the second day Center 775 MHz Res BW 300 Hz Total Carrier Power 29.80			#VBW 1 kHz ACP-I			Span Sweep Upper	900 kHz 30.01 s	CF Ste 90.000 kH Auto Ma
400 500 twelferen of the second day Center 775 MHz Res BW 300 Hz Total Carrier Power 29.80	)2 dBm/ 25	5.00 kHz	#VBW 1 kHz ACP-I req Integ BW	BW Low dBc	er	Span Sweep Upper	900 kHz 30.01 s Filter	CF Ste 90.000 kH Auto Ma Freq Offso
40 0 50 0 Hwell when the provided with Center 775 MHz FRes BW 300 Hz Total Carrier Power 29.80 Carrier Power	02 dBm/ 25 Filter	5,00 kHz Offset F	#VBW 1 kHz ACP-I req Integ BW Hz 25.00 kHz	BW Low dBc -56.64 -:	er dBm dB	Span Sweep Upper dc dBm 3 -26.93	900 kHz 30.01 s Filter OFF	CF Ste 90.000 kH Auto Ma
40 0 50 0 Hwell when the provided with Center 775 MHz FRes BW 300 Hz Total Carrier Power 29.80 Carrier Power	02 dBm/ 25 Filter	5.00 kHz Offset F 87.50 k	#VBW         1 kHz           ACP-I           req         Integ BW           Hz         25.00 kHz           Hz         100.0 kHz	BW dBc -56.64 -: -51.29 -:	<b>er</b> dBm dB 26.84 -56.7	<b>Span</b> <b>Sweep</b> <b>Upper</b> 3 -26.93 0 -21.59	900 kHz 30.01 s Filter OFF OFF	CF Ste 90.000 kH Auto Ma Freq Offso
400 500 <b>Hurring and Angle Statistic</b> Center 775 MHz FRes BW 300 Hz Total Carrier Power 29.80 Carrier Power	02 dBm/ 25 Filter	5.00 kHz Offset F 87.50 k 150.0 k	#VBW         1 kHz           ACP-I           req         Integ BW           4Hz         25:00 kHz           4Hz         100.0 kHz           Hz         100.0 kHz	BW dBc -56.64 - -51.29 - -52.45 -	er dBm dE 26.84 -56.7 21.49 -51.4	Span Sweep Upper dc dBm 3 -26.93 0 -21.59 9 -22.58	900 kHz 30.01 s Filter OFF OFF OFF	CF Ste 90.000 kH Auto Ma Freq Offso
40 0 50 0 Hwell when the provided with Center 775 MHz FRes BW 300 Hz Total Carrier Power 29.80 Carrier Power	02 dBm/ 25 Filter	5.00 kHz Offset F 87.50 k 150.0 k 250.0 k	#VBW         1 kHz           ACP-I           req         Integ BW           Hz         25:00 kHz           Hz         100.0 kHz           Hz         100.0 kHz           Hz         100.0 kHz	BW dBc -56.64 - -51.29 - -52.45 - -52.44 -	er dBm dE 26.84 -56.7 21.49 -51.4 22.65 -52.3	Span Sweep Upper dBm 3 -26.93 0 -21.59 9 -22.58 9 -22.48	900 kHz 30.01 s Filter OFF OFF OFF	CF Ste 90.000 kH Auto Ma Freq Offso

# [Downlink – High, 25 kHz] (87.5kHz - 400kHz)]

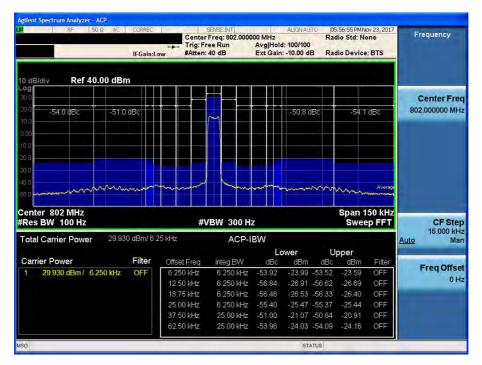


## 700 APCO 25\_Uplink



#### [Uplink – Low, 6.25 kHz (6.25kHz-62.5kHz)]

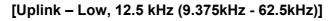
[Uplink – Middle, 6.25 kHz(6.25kHz-62.5kHz)]

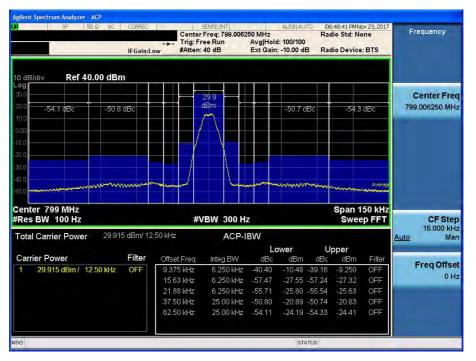




RF 50 Ω /	AC CORREC		SENSE:INT Freq: 804.9968	75 MHz	ALIGNAUT		:00:05 PMN		Frequency
	IFGain:L		ee Run 40 dB	Avg Hold Ext Gain	: 100/100 : -10.00 dB	Rad	lio Device	BTS	
0 dB/div Ref 40.00 c	iBm								
30.0									Center Free
20.0 -55.0 dBc -5	52.4 dBc		m	ورك	-52.4 dE	šč –	-55.1	dBc	804.996875 MH
3.00									
20.0									
30.0									
40.0			han					Average	
50.0 man	And the second sec				were for the second	ment	And the second sec	- werage	
Center 805 MHz							Span 1		05.04
Res BW 100 Hz	).201 dBm/ 6		/BW 300 H				Swee	ep FFT	CF Stej 15.000 kH
Total Carrier Power	2.201 GDH/ 0.	20 KHZ	ACP-I		wer	Û	pper		<u>Auto</u> Mar
Carrier Power	Filter	Offset Freq	Integ BVV	dBc	dBm	dBc	dBm	Filter	F 0#
1 30.201 dBm / 6.250 kl	Hz OFF	6.250 kHz	6.250 kHz	-54.49	-24.29 -	53.70	-23.50	OFF	Freq Offse
		12.50 kHz	6.250 kHz	-57.63	-27.43 -	57.59	-27.39	OFF	0 H
		18.75 kHz	6.250 kHz	-57.45	-27.25 -	57.56	-27.36	OFF	
		25.00 kHz	6.250 kHz	-56.32	-26.12 -	56.25	-26.05	OFF	
		37.50 kHz	25.00 kHz	-52.40	-22.20 -	52.35	-22.15	OFF	
		00 50 111	25.00 kHz	55.04	-24.84 -	55.08	-24.88	OFF	
		62.50 kHz	25.00 KHZ	-55.04	-24.04 -	55.00	21.00		

#### [Uplink – High, 6.25 kHz(6.25kHz-62.5kHz)]

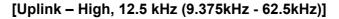


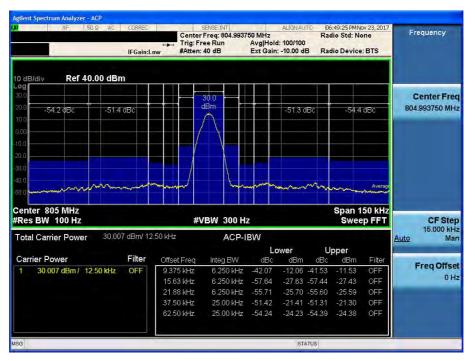




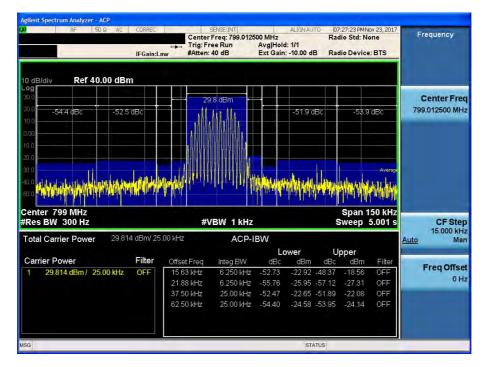
RE SQIQ AC CORREC	Center Trig: Fi	SENSE:INT Freq: 802.0000 ree Run : 40 dB	AvgHold	R d: 100/100	D6:46:25 PMN adio Std: N adio Device	one	Frequency
10 dB/div Ref 40.00 dBm				1			
20.0 20.0 -53.8 dBc -50.3 dBc 10.0 0.00		30.7 dBm		-50.1 dBc	-54.3	dBc	Center Free 802.000000 MH
20 0 30 0							
40.0 50.0	munn	- Line		www.	min	Average	
Center 802 MHz		VBW 300 H		wathin	Span 1	Average 150 kHz ep FFT	CF Step
and the second s		VBW 300 H	z BW		Span 1 Swee	150 kHz ep FFT	CF Ster 15.000 kH <u>Auto</u> Mar
600     Center 802 MHz       #Res BW 100 Hz       Total Carrier Power     30.697 dBm/ 11	2.50 kHz	ACP-I	z BW Lc	ower	Span 1 Swee	150 kHz ep FFT	15.000 kH <u>Auto</u> Mar
Center 802 MHz #Res BW 100 Hz Total Carrier Power 30.697 dBm/ 1			z BW		Span 1 Swee Jpper	150 kHz ep FFT	15.000 kH <u>Auto</u> Mar <b>Freq Offse</b>
Store     Store       Center 802 MHz       #Res BW 100 Hz       Total Carrier Power     30.697 dBm/ 1:       Carrier Power     Filter	2.50 kHz Offset Freq	ACP-I	z BW dBc	pwer dBm dBm	Span 1 Swee Jpper dBm -10.18	150 kHz ep FFT Filter	15.000 kH <u>Auto</u> Ma <b>Freq Offse</b>
Center 802 MHz <b>Res BW 100 Hz</b> Total Carrier Power 30.697 dBm/1: Carrier Power Filter	2.50 kHz Offset Freq 9.375 kHz	ACP-I Integ BW 6.250 kHz	z BW dBc -40.88	<b>ower</b> dBm dBc -10.18 -40.87	Span 1 Sweet Upper dBm -10.18 -26.25	150 kHz ep FFT Filter OFF	15.000 kH <u>Auto</u> Ma <b>Freq Offse</b>
Center 802 MHz <b>Res BW 100 Hz</b> Total Carrier Power 30.697 dBm/1: Carrier Power Filter	2.50 kHz Offset Freq 9.375 kHz 15.63 kHz	ACP-I Integ BW 6.250 kHz 6.250 kHz	z BW dBc -40.88 -57.27	ower dBm dBc -10.18 -40.87 -26.57 -56.94	Span 1 Swee Jpper dBm -10.18 -26.25 -24.51	Filter OFF OFF	15.000 kH <u>Auto</u> Mar
Center 802 MHz <b>Res BW 100 Hz</b> Total Carrier Power 30.697 dBm/1: Carrier Power Filter	2,50 kHz Offset Freq 9,375 kHz 15,63 kHz 21,88 kHz	ACP-I Integ BW 6.250 kHz 6.250 kHz 6.250 kHz	z BVV -40.88 -57.27 -55.70 -50.25	dBm dBr -10.18 -40.87 -26.57 -56.94 -25.00 -55.27 -19.56 -50.10	Span 1 Swee Jpper dBm -10.18 -26.25 -24.51 -19.40	Filter OFF OFF OFF	15.000 kH <u>Auto</u> Mar <b>Freq Offse</b>

#### [Uplink – Middle, 12.5 kHz (9.375kHz - 62.5kHz)]

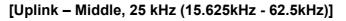


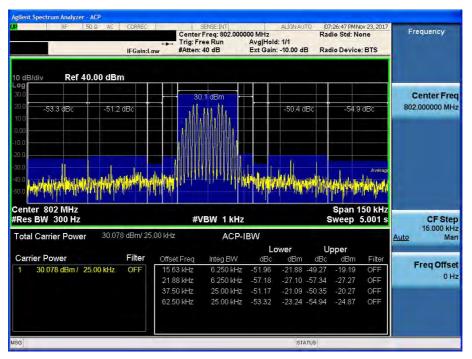






## [Uplink – Low, 25 kHz (15.625kHz - 62.5kHz)]





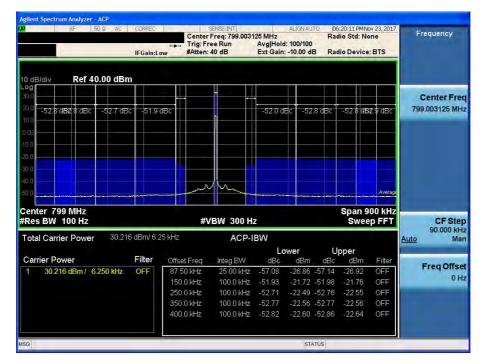


RF 50 Ω AC	CORREC		SENSE:INT Freq: 804.9875	500 MHz	ALIGN AUT		:24:43 PMI dio Std: N	Nov 23, 2017	F	requency
	IFGain:Lo	Trig: Fr	ree Run	AvgHold	i: 1/1 : -10.00 dE		dio Devic			
0 dB/div Ref 40.00 dB	m				1					
30.0		30	0.1 dBm 🔶							Center Fre
20.0 -54.8 dBc -51.1	1 dBc		MAL MAL		-51.9 d	Bc	-54.	4 dBc	804	4.987500 MH
3.00										
0.0		t,								
20.0								Average		
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
30.0			TTTTUVUVIIT.							
30.0 40.0	ok der halle	NVW WVV / / / / /		N. New	AN ULAN	MAM	Historia	ad he we have		
	n ha	NYNN (††††		n <mark>i</mark> u witt		wy.M	Muhyha	ndiyada		
200 200 WWWWWWWWWWWWWWW Center 805 MHz	yy professionelle se			<b>N</b> WWW	<b>W<sup>III</sup>III</b> I	wy/w		150 kHz		25.01
400 200 Denter 805 MHz #Res BW 300 Hz	un tainte		/BW 1 kHz		NAN AND	<b>Wiji, <sup>j</sup>ini</b>		150 kHz 5.001 s		CF Ste 15.000 kH
400 600 Center 805 MHz #Res BW 300 Hz	76 dBm/ 25		/BW 1 kHz ACP-I	BW	<b>W<sup>P</sup>IH</b>		Sweep		Auto	15.000 kH
200 Penter 805 MHz Res BW 300 Hz Total Carrier Power 30.07		.00 kHz	ACP-I	IBW Lo	wer dBm	U	weep	5.001 s		15.000 kł Ma
200 Center 805 MHz Res BW 300 Hz Total Carrier Power 30.07	76 dBm/ 25 Filter OFF			BW	ower dBm -20.62	U dBc	Sweep			15.000 kH Ma Freq Offs
40 0 50 0 Center 805 MHz FRes BW 300 Hz Total Carrier Power Carrier Power	Filter	.00 kHz Offset Freq	ACP-I	IBW La	dBm	U dBc -49.51	sweep pper dBm	5.001 s Filter		15.000 ki Mi Freq Offs
40 0 50 0 Center 805 MHz FRes BW 300 Hz Total Carrier Power Carrier Power	Filter	.00 kHz Offset Freq 15.63 kHz	ACP-I Integ BW 6.250 kHz	IBW Lc dBc -50.69	dBm -20.62	U dBc -49.51 -58.01	pper dBm -19.44	5.001 s Filter OFF		15.000 ki Mi Freq Offs
40 0 50 0 Center 805 MHz FRes BW 300 Hz Total Carrier Power Carrier Power	Filter	.00 kHz Offset Freq 15.63 kHz 21.88 kHz	ACP-I Integ BW 6.250 kHz 6.250 kHz	BW dBc -50.69 -57.15 -51.06	dBm -20.62 -27.08	U dBc -49.51 -58.01 -51.94	pper dBm -19.44 -27.93	5.001 s Filter OFF OFF		15.000 kl Mi Freq Offs
and the second s	Filter	00 KHz Offset Freq 15.63 KHz 21.88 KHz 37.50 KHz	ACP-I Integ BW 6.250 kHz 6.250 kHz 25.00 kHz	BW dBc -50.69 -57.15 -51.06	dBm -20.62 -27.08 -20.99	U dBc -49.51 -58.01 -51.94	pper dBm -19.44 -27.93 -21.86	5.001 s Filter OFF OFF OFF		

# [Uplink – High, 25 kHz (15.625kHz - 62.5kHz)]

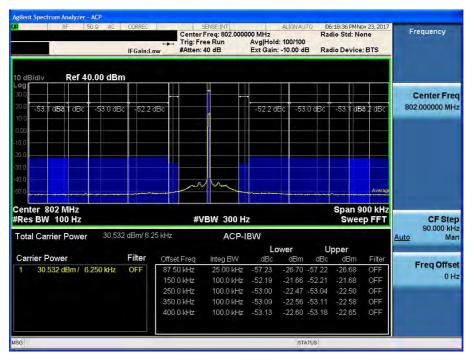


# 700 APCO 25\_Uplink



## [Uplink - Low, 6.25 kHz (87.5kHz-400kHz)]



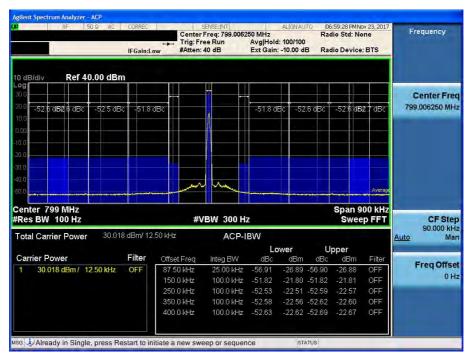




0 RF 50Ω AC	CORREC	Trig: I	SENSE:INT ar Freq: 804.9968 Free Run	Avg Hold		Ra	5:22:11 PM dio Std:	None		Frequency
ID dB/div Ref 40.00 dBr	IFGain:L	ow #Atter	n: 40 dB	Ext Gain:	-10.00 d	B Ra	dio Devi	ice: BT:	s	
.og 30.0			-	•						Center Free
<sup>20.0</sup> -52.7 d <b>B2</b> .7 dBc -52.7 dB	ic -51.9	dBc		-51.9 dE	3c -52	2.7 dBc	-52.7	d <b>B2</b> .8 (	IBc	804.996875 MH
0.00										
20.0					-				_	
30.0 40.0										
50.0									verage	
Center 805 MHz ≉Res BW 100 Hz		#	VBW 300 H	z				900   eep F		CF Step
Total Carrier Power 30.15	0 dBm/ 6.2	?5 kHz	ACP-I						A	90.000 kH uto Ma
Carrier Power	Filter	Offset Freq	Integ BW	Lo dBc	wer dBm		pper dBn	n Fi	lter	
1 30.150 dBm / 6.250 kHz	OFF	87.50 kHz	25.00 kHz	-57.09		-57.12	-26.9			Freq Offse
		150.0 kHz	100.0 kHz	-51.91	-21.76	-51.89	-21.74	4 OF	F	ОH
		250.0 kHz	100.0 kHz	-52.66	-22.51	-52.65	-22.50	o o	F	
		350.0 kHz	100.0 kHz	-52.68	-22.53	-52.73	-22.58	B OF	-F	
		400.0 KHz	100.0 kHz	-52.75	-22.59	-52.80	-22.6	5 Of	-F	

## [Uplink – High, 6.25 kHz(87.5kHz-400kHz)]



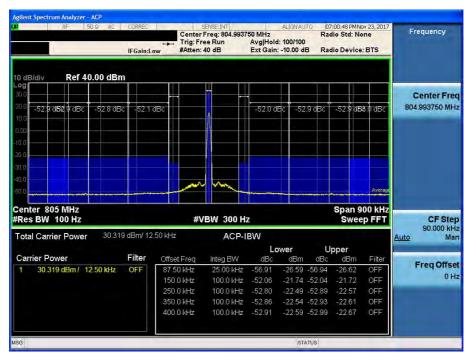




RF 50Ω AC CO	RREC	Center	Freq: 802.000		ALIGNAU	Ra	7:00:02 PM dio Std:	Nov 23, 2017 None	F	requency
IFO	Gain:Low	- Trig: Fr #Atten:		Avg Hold: Ext Gain:			dio Devi	ce: BTS		
0 dB/div Ref 40.00 dBm				,	_					
30.0 20.0 -52.7 d <b>52</b> 6 dBc -52.6 dBc -	51.9 dBc			-51.9 dE	c -52	.6 dBc	-52.7 (	1 <b>62</b> .8 dBc		Center Fre 2.000000 MH
0.00										
		m	Im					Average		
Center 802 MHz Res BW 100 Hz		#\	BW 300 H	z				900 kHz eep FFT		CF Ste
Total Carrier Power 30.107 dB	m/ 12.50 k⊦	łz	ACP-I	BW					Auto	90.000 kH Ma
о і в <b>с</b>				Lo			pper			_
		set Freq 50 kHz	Integ BW 25.00 kHz	dBc -56.95	dBm -26.84	dBc	dBm -26.91			Freq Offs
30:107 dBm/ 12:50 kHz O		.50 KHZ 0.0 kHz	25.00 kHz 100.0 kHz	-56.95 -51.86	-20.84		-26.91			01
	1 C 1 C	0.0 kHz	100.0 kHz 100.0 kHz	-51.60	-21.76		-21.70			
		0.0 kHz	100.0 kHz	-52.62	-22.52		-22.64			
		10.0 kHz	100.0 kHz				-22.69			

#### [Uplink – Middle, 12.5 kHz(87.5kHz - 400kHz)]



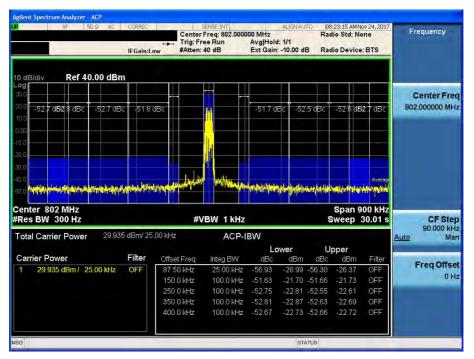




4 RF   50 Ω AC	CORREC	Center Trig: Fi	SENSE:INT Freq: 799.0120 ree Run	Avg Hold		Rad	lio Std: M		Span
	IFGain:L	ow #Atten:	40 dB	Ext Gain:	-10.00 dE	B Rad	lio Devic	e: BTS	Spar 900.000000 kH
IO dB/div Ref 40.00 dB	m							_	
30.0 20.0 -52.6 dB2.7 dBc -52.3 dB	3c -51.6	dBc		-51.4 dE	sc -52	3 dBc	-52.5 d	B2 5 dBc	
10.0	ينتن و كي و		- [1]						
10.0			<b>.</b>						Full Spa
20.0									
30.0									
30.0	instants		-	and the second				Average	
45.0 50.0 <mark>Ministrational (Ministration</mark> (Ministration)	gilti i konstanda	with the second s	1 Merchanton	(Pr-14H)(-y-1yPla)	un er	kalat y konsen		uphen right when t	
40.0 Sood y finding and the first of the fir	q.Millikensterinde		/BW 1 kHz	((Pradition))ates	Wayaanadad		Span	Average Warnelute 900 kHz 30.01 s	
400 600 <b>///////////////////////////////////</b>	plining and the second se	#\			Weijegestikel		Span	900 kHz	LastSpa
40.0 E0.0 Physician Anno Anno Anno Anno Anno Anno Anno An	12 dBm/ 25	<b>#1</b> .00 kHz	/BW 1 kHz ACP-I	BW Lo	wer	<b>ء</b> ں	Span Sweep	900 kHz 30.01 s	
400 Physiological and a state of the state o		#N .00 kHz Offset Freq	/BW 1 kHz ACP-I	BW	wer dBm	t U dBc	Span Sweep pper dBm	900 kHz 30.01 s Filter	
40 0 50 0 Physiological American Res BW 300 Hz Total Carrier Power 29.81 Carrier Power	12 dBm/ 25 Filter	<b>#1</b> .00 kHz	/BW 1 kHz ACP-I	BW Lo dBc	wer	U dBc -56.96	Span Sweep	900 kHz 30.01 s Filter OFF	
10 0 50 0 MHz Center 799 MHz Res BW 300 Hz Total Carrier Power 29.81 Carrier Power	12 dBm/ 25 Filter	#N .00 kHz Offset Freq 87.50 kHz	/BW 1 kHz ACP-I Integ BW 25.00 kHz	BW Lo dBc -56.46	wer dBm -26.65 -21.77	U dBc -56.96 -51.39	Span Sweep pper dBm -27.15	900 kHz 30.01 s Filter OFF OFF	
400 Physiological and a state of the state o	12 dBm/ 25 Filter	# .00 kHz Offset Freq 87.50 kHz 150.0 kHz	/BW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz	BW Lo dBc -56.46 -51.58	wer dBm -26.65	U dBc -56.96 -51.39 -52.31	Span Sweep pper dBm -27.15 -21.58	900 kHz 30.01 s Filter OFF OFF OFF	
400 Physiological and a state of the state o	12 dBm/ 25 Filter	#1 .00 kHz Offset Freq 87.50 kHz 150.0 kHz 250.0 kHz	/BW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz 100.0 kHz	BW Lo dBc -56.46 -51.58 -52.29 -52.69	wer dBm -26.65 -21.77 -22.48	U dBc -56.96 -51.39 -52.31 -52.46	Span Sweep dBm -27.15 -21.58 -22.49	900 kHz 30.01 s Filter OFF OFF OFF OFF	

#### [Uplink – Low, 25 kHz (87.5kHz - 400kHz)]







2 8F 50Ω AC	CORREC	Center Trig: Fi	SENSE:INT Freq: 804.9875 ree Run : 40 dB			Radio Std		Frequency
10 dB/div Ref 40.00 dBr 300 20.0 -53 1 d52 0 dBc -53 0 dE 100 100 20.0 -53 0 dB - 53 0 dB 100 20.0 - 53 0 dB - 53 0 dB 100 100 100 100 100 100 100 10		dBc		-52.2 dB	c -52.9 d	3c -52;8	dB8.0 dBc	Center Fre 804.987500 MH
40.0 	an an an h-shirt an	an state of the state of the	Phintynam	AhanoMalkidadkaa	terelistati mit der bit	ور و و الم	Averag	<u> 26</u>
40.0 500 <b>100 100 100 100 100 100 100 100 100 </b>	4000000		/BW 1 kHz	vorntyioku	laphelynladjud	Spa		CF Step
son <b>Harden Harden Harden</b> Center 805 MHz #Res BW 300 Hz	4 <b>0,40,40,41/1/</b> 94 dBm/ 25	#\			halitekenhanjavil	Spa	n 900 kHz	2
Center 805 MHz #Res BW 300 Hz Total Carrier Power 30.29	94 dBm/ 25	# <b>\</b> 5.00 kHz	/BW 1 kHz ACP-I	BW Lov	wer	Spa Swee Upper	n 900 kHz p 30.01 s	CF Stej 90.000 kH
Center 805 MHz Res BW 300 Hz Total Carrier Power 30.29 Carrier Power	4 dBm/ 25	#N 5,00 kHz Offset Freq	/BW 1 kHz ACP-I	BVV Lov dBc	ver dBm c	Spa Swee Upper	m 900 kHz p 30.01 s m Filter	CF Stej 90.000 kH
Center 805 MHz #Res BW 300 Hz Total Carrier Power 30.29	94 dBm/ 25	#N 5,00 kHz Offset Freq 87.50 kHz	BW 1 kHz ACP-I Integ BW 25.00 kHz	BW Low dBc -57.30	wer dBm c -27.00 -57	Spa Swee Upper 1Bc dB 38 -27.0	m 900 kHz p 30.01 s m Filter 28 OFF	CF Stej 90.000 kH Auto Ma Freq Offse
Center 805 MHz Res BW 300 Hz Total Carrier Power 30.29 Carrier Power	4 dBm/ 25	#N 5,00 kHz Offset Freq	/BW 1 kHz ACP-I	BW Lov dBc -57.30 -51.80	ver dBm c -27.00 -57 -21.50 -52	Spa Swee Upper IBc dB 38 -27.0 .18 -21.8	m 900 kHz p 30.01 s m Filter 08 OFF 38 OFF	CF Stej 90.000 kH Auto Ma Freq Offse
Center 805 MHz Res BW 300 Hz Total Carrier Power 30.29 Carrier Power	4 dBm/ 25	#\ 5.00 kHz Offset Freq 87.50 kHz 150.0 kHz	/BW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz	BW/ dBc -57.30 -51.80 -53.00	wer dBm c -27.00 -57	Spa Swee Upper (Bc dB 38 -27.0 .18 -21.8 .91 -22.6	m 900 kH2 p 30.01 s m Filter 08 OFF 38 OFF 52 OFF	С <b>F Ste</b> j 90.000 кН <u>Auto</u> Ма
Center 805 MHz Res BW 300 Hz Total Carrier Power 30.29 Carrier Power	4 dBm/ 25	#N 5,00 kHz Offset Freq 87,50 kHz 150.0 kHz 250.0 kHz	/BW 1 kHz ACP-I Integ BW 25.00 kHz 100.0 kHz 100.0 kHz 100.0 kHz	BW dBc -57.30 -51.80 -53.00 -52.98	ver dBm c -27.00 -57 -21.50 -52 -22.70 -52	Spa Swee Upper (Bc dB 38 -27.0 .18 -21.8 .91 -22.6 .86 -22.5	m Filter 08 OFF 18 OFF 18 OFF 18 OFF 18 OFF 19 OFF 19 OFF 10 OFF 10 OFF	CF Ste 90.000 kH Auto Ma Freq Offse

# [Uplink – High, 25 kHz] (87.5kHz - 400kHz)]



# **12. RADIATED SPURIOUS EMISSIONS**

#### **FCC Rules**

#### **Test Requirements:**

#### § 2.1053 Measurements required: Field strength of spurious radiation.

(a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of §2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from halfwave dipole antennas.

(b) The measurements specified in paragraph (a) of this section shall be made for the following equipment:

(1) Those in which the spurious emissions are required to be 60 dB or more below the mean power of the transmitter.

(2) All equipment operating on frequencies higher than 25 MHz.

(3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.

(4) Other types of equipment as required, when deemed necessary by the Commission.

#### Test Procedures:

As required by 47 CFR 2.1053, *field strength of radiated spurious measurements* were made in accordance with the procedures of ANSI/TIA-603-C-2004 "Land Mobile FM or PM Communications Equipment Measurement and Performance Standards".

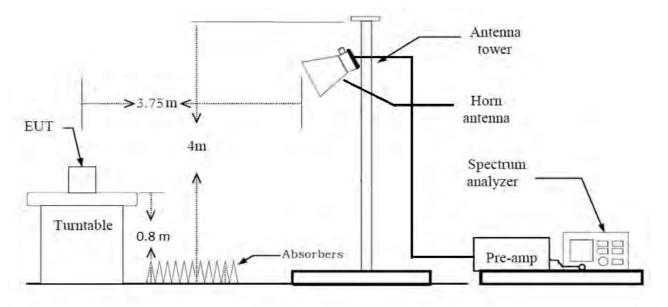
Radiated emission measurements were performed inside a 3 meter semi-anechoic chamber.

The EUT was set at a distance of 3m from the receiving antenna. The EUT's RF ports were terminated to 50ohm load. The EUT was set to transmit at the low, mid and high channels of the transmitter frequency range at its maximum power level. The EUT was rotated about 360and the receiving antenna scanned from 1-3m in order to capture the maximum emission. A calibrated antenna source was positioned in place of the EUT and the previously recorded signal was duplicated. The maximum EIRP of the emission was calculated by adding the forward power to the



calibrated source plus its appropriate gain value. These steps were carried. out with the receiving antenna in both vertical and horizontal polarization. Harmonic emissions up to the 10th or 40GHz, whichever was the lesser, were investigated.

#### **Radiated Spurious Emissions Test Setup**



#### Note :

- 1. According to SVSWR requirement in ANSI 63.4-2014, We performed the radiated test at 3.75 m distance from center of turn table. So, we applied the distance factor( reference distance : 3 m).
- 2. Distance extrapolation factor = 20 log (test distance / specific distance) (dB)



#### Radiated Spurious Emissions Test Result:

#### PS 700

[Downlink]

Ch.	Ch. Freq.(MHz)	Measured Level	Measured Power	Ant. Factor	C.L	A.G.	H.P.F	D.F.	Pol.	Result	
		[dBuV/m]	[dBm]	[dB/m]	[dB]	[dB]	[dB]	[dB]		[dBm]	
	No Critical Peaks Found										

\* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)

#### [Uplink]

Ch.	Ch. Freq.(MHz)	Measured Level	Measured Power	Ant. Factor	C.L	A.G.	H.P.F	D.F.	Pol.	Result	
		[dBuV/m]	[dBm]	[dB/m]	[dB]	[dB]	[dB]	[dB]		[dBm]	
	No Critical Peaks Found										

\* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)



## PS 800 APCO25

#### [Downlink]

Ch. Freq	Freq.(MHz) Level	Measured Level	Measured Power	Ant. Factor	C.L	A.G.	H.P.F	D.F.	Pol.	Result
		[dBuV/m]	[dBm]	[dB/m]	[dB]	[dB]	[dB]	[dB]		[dBm]
Mid	1,735.00	63.31	-31.89	30.090	3.81	44.10	-0.32	1.96	Н	-40.450
867.5	1,735.00	63.460	-31.74	30.090	3.81	44.10	-0.32	1.96	V	-40.300

\* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)

## [Uplink]

Ch.	Freq.(MHz)	Measured Level	Measured Power	Ant. Factor	C.L	A.G.	H.P.F	D.F.	Pol.	Result	
		[dBuV/m]	[dBm]	[dB/m]	[dB]	[dB]	[dB]	[dB]		[dBm]	
	No Critical Peaks Found										

\* C.L.: Cable Loss / A.G.: Ant. Gain / H.P.F.: High Pass Filter / D.F.: Distance Factor (3.75 m)



# **13. FREQUENCY STABILITY OVER TEMPERATURE AND VOLTAGE** VARIATIONS

#### **FCC Rules**

#### **Test Requirements:**

#### § 2.1055 Measurements required: Frequency stability.

- (a) The frequency stability shall be measured with variation of ambient temperature as follows:
  - (1) From  $-30^{\circ}$  to + 50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

#### § 90.213 Frequency stability.

(a) Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

Minimum Frequency Stability [Parts per million (pp								
Frequency range	Fixed and base	Mobile stations						
(MHz)	stations	Over 2 watts output	2 watts or less output					
Below 25	100	100	200					
25-50	20	20	50					
72-76	5		50					
150-174	5	5	<sup>4</sup> 50					
216-220	1.0		1.0					
220-222 <sup>12</sup>	0.1	1.5	1.5					
421-512	2.5	5	5					
806-809	1.0	1.5	1.5					
809-824	1.5	2.5	2.5					
851-854	1.0	1.5	1.5					
854-869	1.5	2.5	2.5					
896-901	0.1	1.5	1.5					
902-928	2.5	2.5	2.5					
902-928 <sup>13</sup>	2.5	2.5	2.5					
929-930	1.5							
935-940	0.1	1.5	1.5					
1427-1435	300	300	300					
Above 2450								

(b) For the purpose of determining the frequency stability limits, the power of a transmitter is considered to be the maximum rated output power as specified by the manufacturer.



#### § 90.539 Frequency stability.

Transmitters designed to operate in 769-775 MHz and 799-805 MHz frequency bands must meet the frequency stability requirements in this section.

(a) Mobile, portable and control transmitters must normally use automatic frequency control (AFC) to lock on to the base station signal.

(b) The frequency stability of base transmitters operating in the narrowband segment must be 100 parts per billion or better.

(c) The frequency stability of mobile, portable, and control transmitters operating in the narrowband segment must be 400 parts per billion or better when AFC is locked to the base station. When AFC is not locked to the base station, the frequency stability must be at least 1.0 ppm for 6.25 kHz, 1.5 ppm for 12.5 kHz (2 channel aggregate), and 2.5 ppm for 25 kHz (4 channel aggregate).

(d) The frequency stability of base transmitters operating in the wideband segment must be 1 part per million or better.

(e) The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked.

#### Test Procedures:

As required by 47 CFR 2.1055, *Frequency Stability measurements* were made at the RF output terminals using a Spectrum Analyzer.

The EUT was placed in the Environmental Chamber.

A CW signal was injected into the EUT at the appropriate RF level. The frequency counter option on the Spectrum Analyzer was used to measure frequency deviations.

The frequency drift was investigated for every 10 °C increment until the unit is

stabilized then recorded the reading in tabular format with the temperature range of -30 to 50 °C.

Voltage supplied to EUT is 110 Vac reference temperature was done at 20°C.

The voltage was varied by  $\pm$  15 % of nominal



Frequency Stability and Voltage Test Results FistNet + PS 700 [Downlink]

> Reference: 120 Vac at 20°C Freq. = 772 MHz Voltage Temp. Frequency Frequency Deviation ppm (%) Error (Hz) (°C) (Hz) (Hz) 772 000 000 0.403 0.000 +20(Ref) 0.00000 -30 772 000 001 0.888 0.486 0.00023 -20 771 999 999 -0.945 -1.347 -0.00063 -10 772 000 001 0.513 0.110 0.00005 100% 0 772 000 001 0.878 0.476 0.00022 +10 772 000 000 -0.892 -0.489 -0.00042 +30 772 000 001 0.899 0.497 0.00023 +40 772 000 000 0.099 -0.303 -0.00014 +50 772 000 000 0.019 -0.384 -0.00018 +20 772 000 000 -0.296 -0.699 -0.00033 High Low +20 772 000 000 0.457 0.054 0.00003

## [Uplink]

Reference: 120 Vac at 20°C Freq. =

Freq. = 802 MHz

Voltage	Temp.	Frequency	Frequency	Deviation	
(%)	(°C)	(Hz)	Error (Hz)	(Hz)	ppm
	+20(Ref)	802 000 001	0.514	0.000	0.00000
	-30	802 000 000	0.400	-0.114	-0.00005
	-20	801 999 999	-0.776	-1.291	-0.00061
	-10	802 000 000	0.416	-0.099	-0.00005
100%	0	802 000 000	0.454	-0.061	-0.00003
	+10	801 999 999	-0.537	-1.051	-0.00049
	+30	802 000 001	0.767	0.253	0.00012
	+40	802 000 001	0.910	0.396	0.00019
	+50	802 000 001	0.747	0.233	0.00011
High	+20	802 000 000	-0.454	-0.969	-0.00045
Low	+20	802 000 000	0.231	-0.283	-0.00013



# PS 800

# [Downlink]

Reference: 110 Vac at 20°C Freq. = 856.0 MHz

Voltage	Temp.	Frequency	Frequency	Deviation		
(%)	(°C)	(Hz)	Error (Hz)	(Hz)	ppm	
	+20(Ref)	856 000 000	0.335	0.000	0.00000	
	-30	856 000 001	0.555	0.220	0.00010	
	-20	855 999 999	-0.869	-1.204	-0.00056	
	-10	856 000 001	0.781	0.446	0.00021	
100%	0	856 000 000	0.217	-0.118	-0.00006	
	+10	855 999 999	-0.708	-1.042	-0.00049	
	+30	856 000 000	0.257	-0.078	-0.00004	
	+40	856 000 001	0.537	0.203	0.00010	
	+50	856 000 001	0.591	0.256	0.00012	
High	+20	855 999 999	-0.744	-1.079	-0.00051	
Low	+20	856 000 000	0.037	-0.298	-0.00014	

# [Uplink]

Reference: 110 Vac at 20°C Freq. = 811.0 MHz

Voltage	Temp.	Frequency	Frequency	Deviation	
(%)	(°°)	(Hz)	Error (Hz)	(Hz)	ppm
	+20(Ref)	811 000 001	0.979	0.000	0.00000
	-30	811 000 001	0.517	-0.462	-0.00022
	-20	811 000 000	-0.269	-1.248	-0.00059
	-10	811 000 000	0.291	-0.689	-0.00032
100%	0	811 000 000	0.411	-0.569	-0.00027
	+10	810 999 999	-0.710	-1.689	-0.00079
	+30	811 000 001	0.653	-0.327	-0.00015
	+40	811 000 000	0.191	-0.789	-0.00037
	+50	811 000 001	0.819	-0.161	-0.00008
High	+20	810 999 999	-0.641	-1.621	-0.00076
Low	+20	811 000 001	0.946	-0.033	-0.00002