		RE	TLIF TES	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Comparise	on					
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	<b>Bi-Directional</b> Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG62990	)	
Operating Mode	Amplifying signal							
Test Specification	Nemko Test Plan 3	17856-2						
Technician	T. Hannemann				Date	January 17	<sup>,th</sup> , 2017	
Climatic Conditions	Temperature 22.3°	C Rela	tive Humidity 17.5	%				
Notes	Uplink Output: 80	6.01250MHz	Modulation:8K10	)F1D Authorized BW	:11.25kHz Ei	nission Mask:	Н	
Spectrum Analyzer 1 Swept SA	• +							
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 € ₩ ₩ N N	
1 Spectrum V Scale/Div 12 dB			Ref LvI Offset 10. Ref Level 30.00 d					
Log Trace 1 Pass								
18.0			/	X				
		/						
6.00			1000					
-6.00			And And	No 1				
			1 and a second					
-18.0		C		1				
-30.0				h.	_			
120		1		and the second s				
-42.0		1		X				
-54.0		1						
-66.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1			James	m. hindows		
-78.0								
Center 806.01250 MHz #Res BW 100 Hz			#Video BW 300	Hz	Sw		Span 50.00 kHz ) ms (1001 pts)	
	<b>?</b> Jan 17, 2017 9:19:10 AM							

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		RE	TLIF TE	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	n					
Customer	Westell, Inc.				Job No.	R-6142N-	-1	
Test Sample	Bi-Directional Am	plifier				•		
Model Number	BDA510-S8				Serial No.	CPG6299	0	
<b>Operating Mode</b>	Signal Generator C	Dutput						
Test Specification	Nemko Test Plan 3	17856-2						
Technician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	ive Humidity 17.5	%				
Notes	Uplink Input: 806	.01250MHz N	Modulation:8K10F	TD Authorized BW	: 11.25kHz Em	ission Mask:	Н	
Spectrum Analyzer 1 Swept SA	+				-	· · · · · ·		
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run		3 4 ₩ ₩ N N	5 6 ₩ ₩ N N	
1 Spectrum								
Scale/Div 13 dB			Ref Level -46.54	dBm				
-59.5 -72.5 -85.5								
-98.5				A A				
-138					han we wanted and the second s	marker and a second		
-164								
Center 806.01250 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe		Span 50.00 kHz 9 ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:05:10 AM							

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		RE	TLIF TES	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	on					
Customer	Westell, Inc.				Job No.	R-6142N	-1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	90	
<b>Operating Mode</b>	Amplifying signal,	, AGC Activate	d					
<b>Test Specification</b>	Nemko Test Plan 3	317856-2						
Technician	T. Hannemann				Date	January 1	.7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	tive Humidity 17.5	%				
Notes	Uplink Output: 80	6.01250MHz	Modulation:8K10	)F1D Authorized BW	: 11.25kHz En	nission Mask	:: H	
Spectrum Analyzer 1 Swept SA	• +	-						
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	A ₩	3 4 ₩ ₩ N N	5 0 W W N N	
1 Spectrum			Ref LvI Offset 10.					
Scale/Div 12 dB		1	Ref Level 30.00 d	Bm				
Trace 1 Pass			1					
18.0		1		1				
6.00		/						
		1	- and					
-6.00			1					
-18.0			K.	N. Contraction				
- Torio		5						
-30.0		1		1				
-42.0		1 t						
76.0		1		X				
-54.0		1						
-66.0	-							
-00.0 war war war	and the second	1			production and and and and and and and and and an			
-78.0							-	
							1.1.5.10	
Center 811.00000 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe		Span 50.00 kHz 9 ms (1001 pts)	
	<b>?</b> Jan 17, 2017 9:16:59 AM	DA						

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Customer Westell, Inc. B-Directional Amplifier Test Sample B-Directional Amplifier Bi-Directional Amplifier Composition Test Plan 317856-2 Technician Temporature 22.3.°C Relative Humidity 17.5% Voltas Uplink Input: 806.01250MHz Modulation:8K10F1D Authorized BW: 11.25kHz Emission Mask: H Spectrum Analyzer 1 Spectrum Analyzer 1 Spectrum Plan RF Composition Composition Of Planer, Off Plane			<b>RE</b> ′	TLIF TE	STING LAB	ORATO	RIES		 
Test Sample     Bi-Directional Amplifier       BDA510.58     Serial No.     CPG62990       Operating Model     Signal Generator Output, AGC Activated     Image: CPG62990       Test Specification     Test Specification     Date     January 17 <sup>th</sup> , 2017       Tethnician     T. Hameman     Date     January 17 <sup>th</sup> , 2017       Climatic Conditions     Temperature 22.3°C     Relative Humidity 17.5%       Notes     Upink Input: 806.01250MHz     Modulation:8K10F1D     Authorized BW: 11.25KHz     Emission Mask: H       Spectrum Analyzer 1     Imput: 25.0     Premp: Off     PNO Best Close     No Type: Log-Power     A     V     V     V       Spectrum Analyzer 1     Imput: 25.0     Premp: Off     PNO Best Close     No Type: Log-Power     A     V	Test Method	Input-vs-Output Si	gnal Compariso	n			•		
Model Number Operating Mode   BDA510-S8   Serial No.   CPG62990     Signal Generator Output, AGC Activated	Customer	Westell, Inc.				Job No.	R-6142N-	-1	
Operating Mode   Signal Generator Output, AGC Activated     Nets   Date   January 17 <sup>th</sup> , 2017     Climatic Conditions   Temperature 22.3 °C   Relative Humidity 17.5%     Uplink Input: 806.01250MHz   Modulation:8K10F1D   Authorized BW: 11.25kHz   Emission Mask: H     Spectrum Analyzer 1   Phot Best Close   Ang Type Log-Power     KEVSIGHT   Imput 25.00   Phot Best Close   Ang Type Log-Power     Aggin Calc   Temperature 22.3 °C   Relative Humidity 17.5%     Uplink Input RF   Phot Best Close   Ang Type Log-Power     Aggin Calc   The Ref Level 46.54 dBm   Ang Type Log-Power     Control of Diagon Aud   Proamp. Off   Ref Level 46.54 dBm     Control of Diagon Aud   Ref Level 46.54 dBm   Ref Level 46.54 dBm     Control of Diagon Aud   Ref Level 46.54 dBm   Spectrum     Control of Diagon Aud   Ref Level 46.54 dBm   Spectrum Aud     Control of Diagon Aud   Ref Level 46.54 dBm   Spectrum Aud     Control of Diagon Aud   Ref Level 40.54 dBm   Spectrum Aud     Control of Diagon Aud   Ref Level 40.54 dBm   Spectrum Aud     Control of Diagon Aud   Ref Level 40.54 dBm   Spectrum Aud     Control of Diagon Aud   Ref Level 40.54 dBm   Spectrum Aud     Spectrum Aud   Spectrum Aud </th <th>Test Sample</th> <th>Bi-Directional Am</th> <th>plifier</th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th>	Test Sample	Bi-Directional Am	plifier				-		
Test Specification       Nemko Test Plan 317856-2       Testmician       Date     January 17 <sup>th</sup> , 2017       Climatic Conditions       Notes     Date     January 17 <sup>th</sup> , 2017       Comparison Analyzer 1       Spectrum Analyzer 1       Spectrum Analyzer 1       Option References: Off Preamp. Off     Preamp. Off     Preamp. Off     Preamp. Off       Spectrum Analyzer 1     Imput Z: 50 O     Gene (Int (S)     Preamp. Off     Preamp. Off     Preamp. Off     Preamp. Off     Preamp. Off     Preamp. Off     Trace 1 Pass       Spectrum Imput Reference     Complexing Action Span 50.00 Miz     Spectrum Imput Reference     Complexing Action Span 50.00 Miz       Spectrum Imput Reference     Preamp. Off     Preamp. O	Model Number	BDA510-S8				Serial No.	CPG6299	0	
Technician   T. Hannemann   Date   January 17 <sup>th</sup> , 2017     Climatic Conditions   Uplink Input: 806.01250MHz   Modulation:8K10F1D   Authorized BW: 11.25kHz   Emission Mask: H     Spectrum Analyzer 1 Swept SA   Imput: 806.01250MHz   Modulation:8K10F1D   Authorized BW: 11.25kHz   Emission Mask: H     KEYSIGHT   Imput: 850.0   Correctors: Off Freq.Ref. Int (S)   PANE   Promp: Off Sig Track Off   Avg Type Log Power AvgIt/dot=100/100   1   2   3   4   3   0     I Spectrum   -   Correctors: Off Freq.Ref. Int (S)   Promp: Off Freq.Ref. Int (S)   Promp: Off Sig Track Off   Avg Type Log Power AvgIt/dot=100/100   1   2   3   4   3   0     1 Spectrum   -   -   -   -   -   -   -   -   -     1 Spectrum   -	<b>Operating Mode</b>	Signal Generator (	Dutput, AGC Ac	tivated					
Climatic Conditions     Temperature 22.3°C     Relative Humidity 17.5%       Notes     Uplink Input: 806.01250MHz     Modulation:8K10F1D     Authorized BW: 11.25kHz     Emission Mask: H       Spectrum Analyzer 1 Sweet SA     Imput: 506.01250MHz     Modulation:8K10F1D     Authorized BW: 11.25kHz     Emission Mask: H       KEYSIGHT Input: RF Coupling AL Magn.Autc     Imput: 500.01250MHz     Modulation:8K10F1D     Authorized BW: 11.25kHz     Emission Mask: H       Sectors     Augn.Autc     Imput: 500.01 Freq Ref. Int (S)     Imput: 500.01 Frequence Ofference Offe	Test Specification	Nemko Test Plan	317856-2						
Notes     Uplink Input: 806.01250MHz     Modulation:8K10F1D     Authorized BW: 11.25kHz     Emission Mask: H       Spectrum Analyzer 1 Svept 5A     Imput 2:50 0 Concentions: Off Preamp. Off     Imput 2:50 0 Preamp. Off     PNO: Best Close Gate: Off JS get Cut     Ang Type: Log Power Anglifold > 100/100 Tig: Free Run     1     2     3     4     5     6       Visit Social Soci	Technician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
Spectrum Analyzer 1 Swept SA     Imput PF       KEYSIGHT loput RF logan Auto bigm Auto	<b>Climatic Conditions</b>	Temperature 22.3°	C Relati	ive Humidity 17.5	%				
Sweet SA     Imput Z: 50     Imput Z: 50     Imput Z: 50     PAND. Best Close     Avg Type Log-Power     1     2     3     4     5     0       Value     PASS     Corrections. Off Feam Auto     Breamp. Off     Past Ref     Avg Type Log-Power     1     2     3     4     5     0       Scale/Div 13 dB     Corrections. Off Feam Auto     Breamp. Off     Ref Level 46.54 dBm     N	Notes	Uplink Input: 806	.01250MHz N	Aodulation:8K10F	F1D Authorized BW:	11.25kHz Em	ission Mask:	Н	
KEYSIGHT     Input RF     Input Z: 50 0     #Atten 0.08     PNO. Best Close     Avg Type Log-Power     1     2     3     4     5     0       Value     Augn Auto     Correctons: Off     Preamp. Off     Disc Off     Sig Track Off     N <th>Spectrum Analyzer 1 Swept SA</th> <th>• +</th> <th></th> <th></th> <th></th> <th>1</th> <th>· · · ·</th> <th></th> <th></th>	Spectrum Analyzer 1 Swept SA	• +				1	· · · ·		
Spectrum   Ref Level 46.54 dBm     Log   Trace 1 Pass     596.5   Trace 1 Pass     72.5   72.5     86.5   72.5     86.5   72.5     112   125     125   138     131   131     141   140     151   141     161   141     161   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     172   141     173   141     174   141     175   141     174   141     175   141     175   141     176   141     177   141     178   141     179   141     179   141     179   141     170   141 </th <th>KEYSIGHT Input: RF Coupling: AC Align: Auto</th> <th>Corrections: Off</th> <th>The second se</th> <th>Gate: Off IF Gain: Auto</th> <th>Avg Hold:&gt;100/100</th> <th>A ₩</th> <th>₩₩</th> <th>₩₩</th> <th></th>	KEYSIGHT Input: RF Coupling: AC Align: Auto	Corrections: Off	The second se	Gate: Off IF Gain: Auto	Avg Hold:>100/100	A ₩	₩₩	₩₩	
Log       Trace 1 Pass         59.5       72.5         72.5       72.5         85.5       86.5         98.5       72.5         112       72.5         125       72.5         112       72.5         112       72.5         112       72.5         112       72.5         112       72.5         112       72.5         112       71.5         112       71.5         113       71.5         114       71.5         1151       71.5         1164       71.00000 MHz         #Video BW 300 Hz       Span 50.00 KHz         Sweep (FFT) ~19.9 ms (1001 pts)									
59.5     Trace 1 Pass       72.5				Ref Level -46.54	dBm				
72.5       46.5       98.5       112       125       141       125       138       141       151       164       Center 811.0000 MHz       #Video BW 300 Hz       Span 50.00 kHz       Sweep (FFT) ~19.9 ms (1001 pts)	Trace 1 Pass				_				
86.5     98.5       112     112       125     112       126     112       126     112       126     113       151     114       164     114       Center 811.00000 MHz     #Video BW 300 Hz       #Video BW 300 Hz     Span 50.00 kHz       Sweep (FFT) ~19.9 ms (1001 pts)	-09.0		1						
98.5 -112 -125 -139 -14 -14 -164 -Center 811.0000 MHz #Video BW 300 Hz #Video BW 300 Hz Span 50.00 kHz Sweep (FFT) ~19.9 ms (1001 pts)	-72.5								
98.5 -112 -125 -139 -14 -14 -164 -Center 811.0000 MHz #Video BW 300 Hz #Video BW 300 Hz Span 50.00 kHz Sweep (FFT) ~19.9 ms (1001 pts)	05.5		1	1	X				
-112       -126         -138       -138         -151       -164         Center 811.00000 MHz       #Video BW 300 Hz         #Video BW 300 Hz       Span 50.00 kHz         %Res BW 100 Hz       Sweep (FFT) ~19.9 ms (1001 pts)	-85,5			Jon -					
-125       -138         -138       -138         -151       -164         -164       -100         Center 811.00000 MHz       #Video BW 300 Hz         #Res BW 100 Hz       Span 50.00 kHz         Sweep (FFT) ~19.9 ms (1001 pts)	-98.5		- Ward		No.				
-125       -138         -138       -138         -151       -164         -164       -100         Center 811.00000 MHz       #Video BW 300 Hz         #Res BW 100 Hz       Span 50.00 kHz         Sweep (FFT) ~19.9 ms (1001 pts)			1		X	-			
-138       -138         -151       -164         -164       -164         Center 811.00000 MHz       #Video BW 300 Hz         #Res BW 100 Hz       Span 50.00 kHz         Sweep (FFT) ~19.9 ms (1001 pts)	-112		P		1				
-151       -164	-125		1		1				
-151       -164						Company of the second			
-164 Center 811.00000 MHz #Video BW 300 Hz Span 50.00 kHz #Res BW 100 Hz Sweep (FFT) ~19.9 ms (1001 pts)	-138								
Center 811.00000 MHz       #Video BW 300 Hz       Span 50.00 kHz         #Res BW 100 Hz       Sweep (FFT) ~19.9 ms (1001 pts)	-151							-	
Center 811.00000 MHz       #Video BW 300 Hz       Span 50.00 kHz         #Res BW 100 Hz       Sweep (FFT) ~19.9 ms (1001 pts)	-164		_						
#Res BW 100 Hz Sweep (FFT) ~19.9 ms (1001 pts)	101								
				#Video BW 300	Hz	Swe			
	45CH	<b>?</b> Jan 17, 2017 8:18:09 AM							

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		<b>RE</b> ′	TLIF TE	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	n			•		
Customer	Westell, Inc.				Job No.	R-6142N-	-1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	0	
<b>Operating Mode</b>	Amplifying signal							
<b>Test Specification</b>	Nemko Test Plan 3	817856-2						
Technician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	ive Humidity 17.5	5%				
Notes	Uplink Output: 81	1.000MHz M	lodulation:8K10F	1D Authorized BW:	11.25kHz Emis	sion Mask: H	[	
Spectrum Analyzer 1 Swept SA	• +							
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run		3 4 ₩ ₩ N N	5 0 W W N N	
1 Spectrum								
Scale/Div 13 dB			Ref Level -46.54	dBm				
Log Trace 1 Pass						-		
-59.5								
70.5		1		1				
-72.5			part of the second					
-85,5		1	- Contraction -		_			
00.5								
-98.5		- July		N.				
-112				2				
100		1			-			
-125		1						
-138 -138					how many	monimum		
1								
-151								
-164					-			
Center 811.00000 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe		Span 50.00 kHz 9 ms (1001 pts)	
	Inn 17 2017	• A			3₩6			
4 5 C <b>1</b>	<b>?</b> Jan 17, 2017 8:17:33 AM							

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		RE	TLIF TE	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	on					
Customer	Westell, Inc.				Job No.	R-6142N-1		
Test Sample	Bi-Directional Am	plifier				-		
Model Number	BDA510-S8				Serial No.	CPG62990		
Operating Mode	Signal Generator C	Dutput						
Test Specification	Nemko Test Plan 3	317856-2						
Technician	T. Hannemann				Date	January 17 <sup>th</sup> , 2	2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	ive Humidity 17.5	5%				
Notes	Uplink Input: 811	.000MHz Mo	dulation:8K10F11	1.25kHz Emiss	ion Mask: H			
Spectrum Analyzer 1 Swept SA	• +	-						
KEYSIGHT Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	A ₩	3 4 5 ₩ ₩ ₩ N N N		
1 Spectrum			· · · · · · ·					
Scale/Div 13 dB			Ref Level -46.54	dBm				
Log Trace 1 Pass								
-59.5		1	1		-			
-72.5		/						
					-			
-85,5			1	1	_			
-98.5			/	1				
		1 A		The second se				
-112		1		No.	-			
-125		1		1				
	and the second second							
-138								
-151					_			
		1						
-164								
Center 811.00000 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe	Span ep (FFT) ~19.9 ms	150.00 kHz (1001 pts)	
	<b>?</b> Jan 17, 2017 8:17:33 AM							

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		<b>RE</b> '	<b>FLIF TE</b>	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	n			•		
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	Bi-Directional Am	plifier				-		
Model Number	BDA510-S8				Serial No.	CPG62990	)	
<b>Operating Mode</b>	Amplifying signal,	AGC Activated			•			
Test Specification	Nemko Test Plan 3	317856-2						
Technician	T. Hannemann				Date	January 17	7 <sup>th</sup> , 2017	
Climatic Conditions	Temperature 22.3°	C Relati	ive Humidity 17.	5%				
Notes	Uplink Output: 81	1.000MHz M	odulation:8K10F	1D Authorized BW: 1	1.25kHz Emis	ssion Mask: H		
Spectrum Analyzer 1 Swept SA	• +	-						
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run		3 4 W W N N	5 6 ₩ ₩ N N	
1 Spectrum			Ref LvI Offset 10					
Scale/Div 12 dB		-	Ref Level 30.00 c	iBm				
Trace 1 Pass			1				· · · · · · · · · · · · · · · · · · ·	
18.0		/						
6.00		/	- ANTON					
		1	2000					
-6.00		1						
-18.0		- Lu						
1918		1		1				
-30.0		1		1				
-42.0		1						
76.0		1		X				
-54.0		1						
-66.0				· · · · · · · · · · · · · · · · · · ·				
-00.0 horizontal and					- manual and a second		and a second second	
-78,0					-			
							1.1.1.1.1	
Center 811.00000 MHz #Res BW 100 Hz			#Video BW 300	) Hz	Swe	seep (FFT) ~19.9	Span 50.00 kHz ms (1001 pts)	
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		RE	TLIF TES	STING LAB	<b>ORATO</b>	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	on			·		
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	Bi-Directional Am	plifier				L		
Model Number	BDA510-S8				Serial No.	CPG6299	0	
Operating Mode	Signal Generator (	Dutput, AGC Ad	ctivated			-		
<b>Fest Specification</b>	Nemko Test Plan	317856-2						
Fechnician	T. Hannemann				Date	January 17	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Rela	tive Humidity 17.5	%				
Notes	Uplink Input: 811	.000MHz Mo	dulation:8K10F1I	Authorized BW: 1	1.25kHz Emiss	ion Mask: H		
Spectrum Analyzer 1 Swept SA	• +	-						
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref. Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	A ₩	3 4 ₩ ₩ N N	5 6 ₩ ₩ N N	
1 Spectrum								
Scale/Div 13 dB			Ref Level -46.54	dBm				
Log Trace 1 Pass								
-59.5								
		1	1					
-72.5			1					
-85.5		1		1				
			1			· · · · ·		
-98.5		IN IN		X				
-112		1		1				
		1		7		· · · · · ·		
-125		1		1	V			
-138	mann				Kungwanning		بار والما محمد المار منحر	
-151		-			-			
464								
-164								
Center 811.00000 MHz		_	#Video BW 300	U+		-	Span 50.00 kHz	
#Res BW 100 Hz			#VIGEO BVV 300	<b>T</b> 2	Swe		ms (1001 pts)	
	Jan 17, 2017	A						
	<b>?</b> Jan 17, 2017 8:18:09 AM					<b>8-8</b>		

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		RE	TLIF TES	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	on					
Customer	Westell, Inc.				Job No.	R-6142N	-1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	90	
<b>Operating Mode</b>	Amplifying signal							
Test Specification	Nemko Test Plan 3	317856-2						
Technician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	tive Humidity 17.5	%				
Notes	Uplink Output: 81	5.98750MHz	Modulation:8K10	)F1D Authorized BW	<sup>7</sup> : 11.25kHz Er	nission Mask	:: H	
Spectrum Analyzer 1 Swept SA	• +	-						
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	A ₩	3 4 W W N N	5 0 W W N N	
1 Spectrum			Ref LvI Offset 10.					
Scale/Div 12 dB		1	Ref Level 30.00 d	Bm				
Trace 1 Pass			1					
18.0		1		1				
6.00		/	moun					
			1.1				1.	
-6.00			1	2 L				
-18.0			×	"he				
		1		1				
-30.0		1		2				
-42.0		1		2				
		1		1				
-54.0		1						
-66.0		4			Jummentine	and the second second	المسمور مراسم المراجع المراجع المساحة	
-78.0								
Center 815.98750 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe		Span 50.00 kHz .9 ms (1001 pts)	
	<b>?</b> Jan 17, 2017 9:14:09 AM	DA						

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		RE'	TLIF TES	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	n					
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	Bi-Directional Am	plifier				-		
Model Number	BDA510-S8				Serial No.	CPG62990	C	
<b>Operating Mode</b>	Signal Generator (	Dutput						
Test Specification	Nemko Test Plan 3	817856-2						
Technician	T. Hannemann				Date	January 17	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	ive Humidity 17.5	%				
Notes	Uplink Input: 815	.98750MHz M	Modulation:8K10F	1D Authorized BW	11.25kHz Em	ission Mask: l	H	
Spectrum Analyzer 1 Swept SA	• +							
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref. Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	A ₩	3 4 ₩ ₩ N N	5 6 ₩ ₩ N N	
1 Spectrum								
Scale/Div 13 dB			Ref Level -46.54	dBm				
Log Trace 1 Pass								
-59.5			/					
-72.5		/						
-12.3		1	1					
-85,5		1	Jord	1				
-98.5								
-90.5		1 and the second		X				
-112							<hr/>	
125		1-	1 ······	X	-			
-125		1						
-138	minimum				man and a second	minning		
171								
-151								
-164								
Lating the second second							1000	
Center 815.98750 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe		Span 50.00 kHz ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:21:01 AM	DA						

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		RE	TLIF TE	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	n					
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	0	
<b>Operating Mode</b>	Amplifying signal,	AGC Activated	1					
Test Specification	Nemko Test Plan	817856-2						
Technician	T. Hannemann				Date	January 17	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	ive Humidity 17.5	5%				
Notes	Uplink Output: 81	5.98750MHz	Modulation:8K1	0F1D Authorized BW	:11.25kHz Er	nission Mask:	Н	
Spectrum Analyzer 1 Swept SA	• +							
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run		3 4 ₩ ₩ N N	5 ô W W N N	
1 Spectrum		1	Ref LvI Offset 10					
Scale/Div 12 dB		-1-	Ref Level 30.00 d	IBM	T			
Trace 1 Pass								
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6.00			manin					
		/	1	1 1				
-6.00			1	and the				
-18.0		No. Contraction of the second s	1					
		1		X				
-30.0				X				
-42.0		1		1				
		J.		Z.				
-54.0		1	1	1			-	
-66.0		4			Lamore			
the second second to be a							a survey of the	
-78.0								
							1.1. 5.1	
Center 815.98750 MHz #Res BW 100 Hz	_		#Video BW 300	) Hz	Swe		Span 50.00 kHz ms (1001 pts)	
	<b>?</b> Jan 17, 2017 9:15:03 AM							

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		RE	TLIF TE	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Comparis	on					
Customer	Westell, Inc.				Job No.	R-6142N-1	·	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG62990		
Operating Mode	Signal Generator C	Output, AGC A	ctivated					
Test Specification	Nemko Test Plan	317856-2						
Technician	T. Hannemann				Date	January 17 <sup>t</sup>	<sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Rela	tive Humidity 17.5	%				
Notes	Uplink Input: 815							
Spectrum Analyzer 1 Swept SA	+			1.1	-			
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	A ₩	3 4 W W N N	5 6 W W N N	
1 Spectrum								
Scale/Div 13 dB			Ref Level -46.54	dBm				
Log Trace 1 Pass								
-59.5			1		_			
-72.5		1						
-(2,3)			1					
-85,5		1	1	1				
00.0								
-98.5		1		1			1	
-112		-		1				
		1-		1	-			
-125		1						
-138	min	-			an and the second	······	man	
-151								
-164								
10)								
Center 815.98750 MHz #Res BW 100 Hz		-	#Video BW 300	Hz	Swe	Sj ep (FFT) ~19.9	pan 50.00 kHz ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:23:56 AM	DA						

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		RE	<b>FLIF TES</b>	STING LAB	ORATO	RIES	_		
Test Method	Input-vs-Output Si	gnal Comparisor	1						
Customer	Westell, Inc.				Job No.	R-6142N	-1		
Test Sample	Bi-Directional Am	plifier				-			
Model Number	BDA510-S8				Serial No.	CPG6299	90		
Operating Mode	Amplifying signal								
Test Specification	Nemko Test Plan 3	317856-2							
Technician	T. Hannemann				Date	January 1	17 <sup>th</sup> , 2017		
<b>Climatic Conditions</b>	Temperature 22.3°	C Relati	ve Humidity 17.5	%					
Notes	Downlink Output:	851.01250MHz	Modulation:81	K10F1D Authorized	BW: 11.25kHz	Emission M	ask: H		
Spectrum Analyzer 1 Swept SA	+	-	-121-		_				
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run		3 4 ₩ ₩ N N	5 6 ₩ ₩ N N		
1 Spectrum V Scale/Div 12 dB			Ref LvI Offset 10. Ref Level 30.00 d						
Log			Kei Level 50.00 u						
Trace 1 Pass			/						
18.0		/							
6.00			المراجع محافظتهم						
		1							
-6.00			1						
-18.0		1		1					
		1	-	1		1			
-30.0		1		1 to	-				
-42.0		1		1					
		10		1				1	
-54.0		1							
-66.0	man marker and the second	1			Participation and and and and and and and and and an	and the second and an an			
-78.0									
Center 851.01250 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe		Span 50.00 kHz .9 ms (1001 pts)		
	<b>?</b> Jan 17, 2017 8:58:50 AM	DA							

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		RE	<b>FLIF TE</b>	STING LAB	ORATO	RIES	_	
Test Method	Input-vs-Output Si	gnal Compariso	n			·		
Customer	Westell, Inc.				Job No.	R-6142N-	·1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	0	
<b>Operating Mode</b>	Signal Generator C	Dutput						
Test Specification	Nemko Test Plan 3	317856-2						
Technician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relati	ve Humidity 17.5	5%		¥		
Notes	Downlink Input: 8	351.01250MHz	Modulation:8K	10F1D Authorized By	W: 11.25kHz	Emission Mas	k: H	
Spectrum Analyzer 1 Swept SA	• +							
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 6 W W N N	
1 Spectrum			S					
Scale/Div 13 dB			Ref Level -46.54	dBm				
-59.5 -72.5 -85.5 -98.5								
-112 -125 -138	ng wash was a conferment of the	-			- the grade - contractions			
-151 -164 Center 851.01250 MHz			#Video BW 300	Hz	_		Span 50.00 kHz	
#Res BW 100 Hz	A lan 17 2017	•			Sw	eep (FFT) ~19.9	9 ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:28:08 AM	$\square$						

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		RE	<b>FLIF TE</b>	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Comparisor	1			-		
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	Bi-Directional Am	plifier			-	-		
Model Number	BDA510-S8				Serial No.	CPG62990	)	
<b>Operating Mode</b>	Amplifying signal,	AGC Activated						
Test Specification	Nemko Test Plan 3	317856-2						
Technician	T. Hannemann				Date	January 17	<sup>7<sup>th</sup>, 2017</sup>	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relati	ve Humidity 17.5	5%				
Notes	Downlink Output:	851.01250MHz	Modulation:8	K10F1D Authorized E	3W: 11.25kHz	Emission Ma	sk: H	
Spectrum Analyzer 1 Swept SA	+	-	-121	Constraints.	-			
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run		3 4 ₩ ₩ N N	5 00 ₩ ₩ N N	
1 Spectrum			Ref LvI Offset 10.					
Scale/Div 12 dB			Ref Level 30.00 d	Bm				
Trace 1 Pass			1					
18.0		/		1				
6.00			and the second					
		1	and the second s	XX				
-6.00			1	1				
-18.0				X		_		
		1		X				
-30.0		1		A.	-			
-42.0		1						
		1			-			
-54.0	_			)	6			
-66.0	- Coperation	4			1	Manager and		
		1						
-78,0								
Center 851.01250 MHz			#Video BW 300				pan 50.00 kHz	
#Res BW 100 Hz	_		#video Bvv 300	· n2	Swe	د 19.9~ (FFT) (FFT)		
	<b>?</b> Jan 17, 2017 8:59:15 AM							

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		RE	<b>FLIF TE</b>	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Comparisor	n					 
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Fest Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	0	
Operating Mode	Signal Generator C	utput, AGC Act	ivated					
<b>Fest Specification</b>	Nemko Test Plan 3	17856-2						
Fechnician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relati	ve Humidity 17.5	5%				
Notes	Downlink Input: 8	51.01250MHz	Modulation:8K	10F1D Authorized By	W: 11.25kHz	Emission Masl	k: H	
Spectrum Analyzer 1 Swept SA	• +	-	- * <i>C</i> - *					
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 0 W W N N	
1 Spectrum							_	
Scale/Div 13 dB			Ref Level -46.54	dBm				
-59.5 -72.5 -85.5 -98.5 -112 -125 -138								
151 164 Center 851.01250 MHz Res BW 100 Hz			#Video BW 300	) Hz	Sw		Span 50.00 kHz ) ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:31:02 AM							

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		RE	TLIF TE	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	on					
Customer	Westell, Inc.				Job No.	R-6142N-	-1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	0	
Operating Mode	Amplifying signal							
Test Specification	Nemko Test Plan 3	817856-2						
Technician	T. Hannemann				DateJanuary 17th, 2017			
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	ive Humidity 17.5	5%				
Notes	Downlink Output:	0F1D Authorized BW	W: 11.25kHz E	Emission Mask	:: H			
Spectrum Analyzer 1 Swept SA	• +							
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 ô W W N N	
1 Spectrum V Scale/Div 12 dB			Ref Lvi Offset 10. Ref Level 30.00 d					
Log Trace 1 Pass		-	T				1	
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			Part -	N N				
-18.0		- And						
-30.0				1				
		1		1				
-42.0		1		X				
-54.0		1		\				
		1					1	
-66.0 monterior	in in the second second	-			handrenner	mon	- manual and	
-78.0								
							1.	
Center 856.00000 MHz #Res BW 100 Hz			#Video BW 300	Hz	Sw		Span 50.00 kHz 9 ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:54:40 AM							

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		RE	TLIF TES	STING LAB	ORATO	RIES	_	
Test Method	Input-vs-Output Si	gnal Compariso	on					
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG62990	)	
<b>Operating Mode</b>	Signal Generator C							
Test Specification	Nemko Test Plan	317856-2						
Technician	T. Hannemann				Date	January 17	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	tive Humidity 17.5	%				
Notes	Downlink Input: 8	356.000MHz	Modulation:8K10	F1D Authorized BW	:11.25kHz Em	ission Mask: H	H	
Spectrum Analyzer 1 Swept SA	• +	-						
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	A ₩	3 4 ₩ ₩ N N	5 0 W W N N	
1 Spectrum								
Scale/Div 13 dB			Ref Level -46.54	dBm				
Trace 1 Pass								
-59.5							-	
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			1					
-85,5			A COLORIZATION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER					
-98.5			1					
		1						
-112		1		1	-			
-125		1		1				
				1	C			
-138								
-151					_			
		1						
-164		1						
		1					50.001	
Center 856.00000 MHz #Res BW 100 Hz			#Video BW 300	HZ	Swe		Span 50.00 kHz ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:32:56 AM	DA						

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		RE	TLIF TE	STING I	LABC	)RAT(	ORIES	5			
Test Method	Input-vs-Output Si	gnal Compariso	n					•			
Customer	Westell, Inc.					Job No.	R-61	42N-1			
Test Sample	Bi-Directional Am	plifier				_					
Model Number	BDA510-S8					Serial No.	CPG	52990			
<b>Operating Mode</b>	Amplifying signal,	AGC Activated	1				-				
<b>Test Specification</b>	Nemko Test Plan 3	17856-2									
Technician	T. Hannemann					DateJanuary 17th, 2017					
<b>Climatic Conditions</b>	Temperature 22.3°	C Relat	ive Humidity 17.5	5%							
Notes	Downlink Output:	856.000MHz	Modulation:8K1	0F1D Autho	rized BW:	11.25kHz	Emission I	Mask: H			
Spectrum Analyzer 1 Swept SA	• +	-		<u></u>	1						
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-F Avg Hold:>100/1 Trig: Free Run	100	1 2 A ₩ P N	3 2 W V N N	∉ ₩	© ₩ N		
1 Spectrum			Ref LvI Offset 10.		1.1						
Log			Ref Level 30.00 d	BM			-				
Trace 1 Pass			/								
18.0		1	1	1							
6.00			mention		1		-				
		1		~	1						
-6.00			1		-						
-18.0				Va.			-				
		1		X	4			_			
-30.0		1			1			1			
-42.0		1			1						
1 and		1			1						
-54.0		1	+								
-66.0		-						-	man		
-78.0						-	-				
Center 856.00000 MHz #Res BW 100 Hz			#Video BW 300	Hz		s	weep (FFT)		50.00 kHz 1001 pts)		
	<b>?</b> Jan 17, 2017 8:52:47 AM								X		

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		RE	TLIF TE	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Comparis	on			-		
Customer	Westell, Inc.				Job No.	R-6142N-	-1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	0	
Operating Mode	Signal Generator C	Dutput, AGC A	ctivated					
Test Specification	Nemko Test Plan 3	817856-2						
Technician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
Climatic Conditions	Temperature 22.3°	C Rela	tive Humidity 17.5	5%				
Notes	Downlink Input: 8	356.000MHz	Modulation:8K10	F1D Authorized BW:	11.25kHz Em	ission Mask:	Н	
Spectrum Analyzer 1 Swept SA	• +	1						
KEYSIGHT Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run		3 4 ₩ ₩ N N	5 0 W W N N	
1 Spectrum			199 order Fil					
Scale/Div 13 dB			Ref Level -46.54	dBm				
Log Trace 1 Pass								
-59:5			1					
70.5		/						
-72.5			1					
-85,5			1 de la compañía de l		-			
00.5				1				
-98.5		L'and		1		/		
-112		1						
		1						
-125		1		1				
-138		-ale			howeness	monum	mon	
101								
-151								
-164								
Center 856.00000 MHz #Res BW 100 Hz			#Video BW 300	) Hz	Swe		Span 50.00 kHz 9 ms (1001 pts)	
4 5 C 1	<b>?</b> Jan 17, 2017 8:32:26 AM							

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		RE	<b>FLIF TE</b>	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Compariso	n			•		
Customer	Westell, Inc.				Job No.	R-6142N	-1	
Test Sample	Bi-Directional Am	plifier				L		
Model Number	BDA510-S8				Serial No.	CPG6299	90	
Operating Mode	Amplifying signal							
Test Specification	Nemko Test Plan	317856-2						
Technician	T. Hannemann				Date			
Climatic Conditions	Temperature 22.3°	C Relati	ve Humidity 17.5	%				
Notes	Downlink Output	: 860.98750MHz	Modulation:8	K10F1D Authorized	BW: 11.25kHz	Emission M	ask: H	
Spectrum Analyzer 1 Swept SA	• +	-		N.			-	
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 6 ₩ ₩ N N	
1 Spectrum V Scale/Div 12 dB			Ref LvI Offset 10. Ref Level 30.00 d					
Log		1	Kei Level 50.00 u		1			
Trace 1 Pass		1						
18.0		/						
6.00			the surgeous					
		1	10-00-00	XX				
-6.00			J.C.					
-18.0				1				
		1		my.				
-30.0		J.		ta .				
-42.0		1 -						
		1						
-54.0		1			8			
-66.0	Contemporter and a lite	1			N	a d Delta da Press		
and a start and store and half there						and the second second		
-78,0								
							and the second	
Center 860.98750 MHz #Res BW 100 Hz			#Video BW 300	Hz	Sw		Span 50.00 kHz 9 ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:45:59 AM	DA						

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		RE	<b>FLIF TES</b>	STING LAB	ORATO	RIES		
Test Method	Input-vs-Output Si	gnal Comparisor	ı					
Customer	Westell, Inc.				Job No.	R-6142N	-1	
Fest Sample	Bi-Directional Am	plifier			·			
Model Number	BDA510-S8				Serial No.	CPG6299	90	
Operating Mode	Signal Generator C	Dutput				-		
<b>Fest Specification</b>	Nemko Test Plan 3	317856-2						
Fechnician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
Climatic Conditions	Temperature 22.3°	C Relati	ve Humidity 17.5	%				
Notes	Downlink Input: 8	860.98750MHz	Modulation:8K	10F1D Authorized B	W: 11.25kHz	Emission Ma	sk: H	
Spectrum Analyzer 1 Swept SA	• +		- * <i>*</i> - *		1			
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 6 ₩ ₩ N N	
1 Spectrum								
Scale/Div 13 dB			Ref Level -46.54	dBm				
-59.5 -72.5 -85.5 -98.5								
-112 -125 -138								
-164								
Center 860.98750 MHz #Res BW 100 Hz			#Video BW 300	Hz	Swe		Span 50.00 kHz 9 ms (1001 pts)	
	<b>?</b> Jan 17, 2017 8:36:43 AM							

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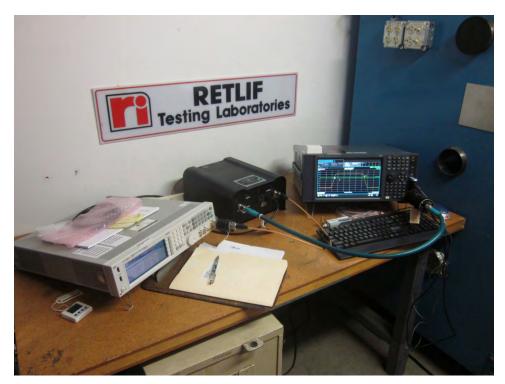
		RE	<b>FLIF TE</b>	STING L	ABC	<b>DRATO</b>	RIES	=		
Test Method	Input-vs-Output Si	gnal Compariso	n							
Customer	Westell, Inc.					Job No.	R-6142	N-1		
Test Sample	Bi-Directional Am	plifier								
Model Number	BDA510-S8					Serial No.	CPG62	990		
Operating Mode	Amplifying signal,	, AGC Activated								
<b>Test Specification</b>	Nemko Test Plan 3	317856-2								
Technician	T. Hannemann					Date	January	17 <sup>th</sup> , 2017		
<b>Climatic Conditions</b>	Temperature 22.3°	C Relati	ve Humidity 17.5	%						
Notes	Downlink Output:	860.98750MHz	Modulation:8	K10F1D Autho	rized BV	BW: 11.25kHz Emission Mask: H				
Spectrum Analyzer 1 Swept SA	• +	-	1921		61			-		
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 30 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Pow Avg Hold:>100/100 Trig: Free Run	-	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 0 ₩ ₩ N N		
1 Spectrum V Scale/Div 12 dB			Ref LvI Offset 10. Ref Level 30.00 d		1.1			_		
Log		1	Kei Level 30.00 u	B(1)				1		
Trace 1 Pass										
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6.00				the second					-	
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-0.00			1	L.						
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-00.0		1			4					
-42.0		1			J.					
-54.0		- f			1					
21.0		1			1					
-66.0	in an	4			X	mentany charmen	mon	min many man	-	
-78.0			· · · · · · · · · · · · · · · · · · ·							
i Ψ(ĝ										
Center 860.98750 MHz #Res BW 100 Hz			#Video BW 300	Hz	-	Sv	veep (FFT) ~1	Span 50.00 kH 9.9 ms (1001 pts		
	<b>?</b> Jan 17, 2017 8:49:38 AM	DA							1	

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		RE	<b>FLIF TE</b>	STING LAB	ORATO	RIES	_	
Test Method	Input-vs-Output Si	gnal Comparisor	ı			-		
Customer	Westell, Inc.				Job No.	R-6142N-	1	
Test Sample	Bi-Directional Am	plifier						
Model Number	BDA510-S8				Serial No.	CPG6299	0	
<b>Operating Mode</b>	Signal Generator C	Output, AGC Act	ivated					
Test Specification	Nemko Test Plan 3	317856-2						
Technician	T. Hannemann				Date	January 1	7 <sup>th</sup> , 2017	
<b>Climatic Conditions</b>	Temperature 22.3°	C Relati	ve Humidity 17.5	5%				
Notes	Downlink Input: 8	60.98750MHz	Modulation:8K	10F1D Authorized B	W: 11.25kHz	Emission Mas	k: H	
Spectrum Analyzer 1 Swept SA	• +					· · · · ·		
KEYSIGHT Input: RF Coupling: AC Align: Auto	Input Z: 50 Ω Corrections: Off Freq Ref: Int (S)	#Atten: 0 dB Preamp: Off	PNO: Best Close Gate: Off IF Gain: Auto Sig Track: Off	Avg Type: Log-Power Avg Hold:>100/100 Trig: Free Run	1 2 A ₩ P N	3 4 ₩ ₩ N N	5 6 ₩ ₩ N N	
1 Spectrum			S	1				
Scale/Div 13 dB			Ref Level -46.54	dBm				
Trace 1 Pass     -59.5     -72.5     -85.5     -98.5     -112     -125     -138     -151								
-164 Center 860.98750 MHz #Res BW 100 Hz	<b>?</b> Jan 17, 2017 8:38:01 AM		#Video BW 300	) Hz	Sw	eep (FFT) ~19.9	Span 50.00 kHz 9 ms (1001 pts)	

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Test Photographs Mean Output Power and Amplifier/Booster Gain



Test Setup



**Retlif Testing Laboratories** 

Report No. R-6142N-1, Rev. A

#### Mean Output Power and Amplifier/Booster Gain Test Data



**Retlif Testing Laboratories** 

Report No. R-6142N-1, Rev. A

	<b></b> RETLIF TESTING LABORATORIES							
Test Method	Mean Output Power and Amplifier-Booster Gain							
Customer	Westell, Inc.	Job No.	R-6142N-1					
Test Sample	Bi-Directional Amplifier	3i-Directional Amplifier						
Model Number	BDA510-S8	Serial No.	CPG62990					
<b>Operating Mode</b>	Amplifying CW signal at 811 MHz							
Test Specification	Nemko Test Plan 317856-2							
Technician	M. Seamans	Date	November 21 <sup>st</sup> , 2016					
Climatic Conditions	Temp: 19.0 °C Relative Humidity: 31.3 %							
Notes	Uplink Signal Generator Setting: -54.20dBm (-53.35dBm measured signal g Amplifier Output: 27.05dBm Gain: 80.40dB	generator output)						

KEY		Input: RF Coupling: AC	Input Z: 50 Ω Corrections: Off	Atten: 20 dB Preamp: Off	PNO: Best Wide Gate: Off	Avg Type: L Trig: Free R		1 M	2 ₩	₩	4	₩	₩
ж	Ģ	Align: Auto	Freq Ref: Int (S)		IF Gain: Low Sig Track: Off			р	Ň	N	N	N	Ň
Spe		v	nadar venden zu zeneralden zuen er	balanga ang pang ang ang ang ang ang ang ang ang ang	Ref Lvi Offset 30				n aa kaan maadaa kaa kaa kaa kaa kaa kaa kaa kaa ka	M	kr1 8	11.001	
scale	/Div 10 d	B			Ref Level 40.00 d	Bm						27.05	dBi
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-30.0		······································											
40.0													
-50.0													
	r 811.000 BW 100 I				#Video BW 300	kHz				SW		5pan 1.04 0 ms (10	

Page 1 of 6

# DETI IE TESTINC I ABODATODIES

	KEILIF IESIING LADU		
Test Method	AGC Threshold		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying CW signal at 811 MHz, AGC Activated		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 21 <sup>st</sup> , 2016
<b>Climatic Conditions</b>	Temp: 19.0 °C Relative Humidity: 31.3 %		
Notes	Uplink with AGC Signal Generator Setting: -51.20dBm (-50.35dBm measur	red signal genera	tor output)
	Amplifier Output: 26.99dBm Gain: 77.34dB		

KEYSIGH	Coupling: AC	Input Z: 50 Ω Corrections: Off	Atten: 20 dB Preamp: Off	PNO: Best Wide Gate: Off	Avg Type: Log Trig: Free Rui		1 M	_2 ₩4	₩	4 ₩		Ŵ
<u></u>	Align: Auto	Freq Ref: Int (S)		IF Gain: Low Sig Track: Off			р	N	N	N	N	Ň
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Scale/Div 10	dB		1	Ref Level 40.00 d	IBm		1		1		26.99	авл
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-40.0												
-50.0												
Center 811.00 #Res BW 100				#Video BW 300	kHz				Si		Span 1.0 90 ms (10	

Page 2 of 6

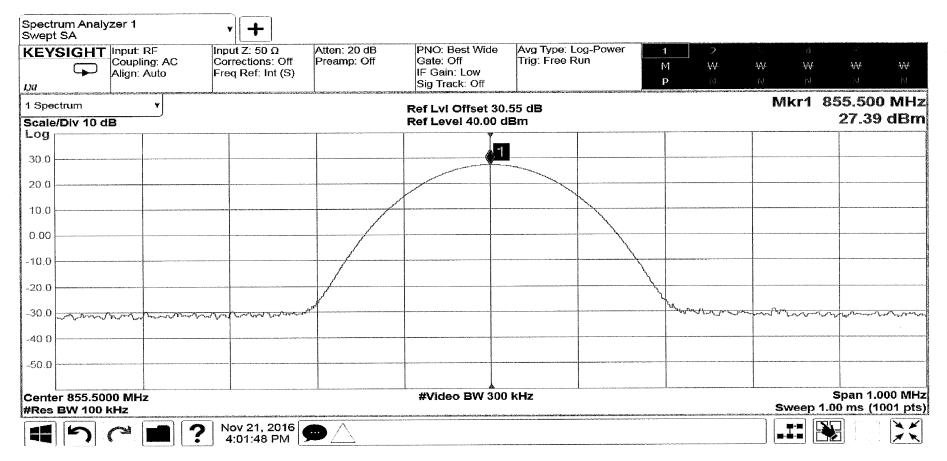
# **RETLIF TESTING LABORATORIES**

Test Method	AGC Threshold		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying CW signal at 855.5 MHz		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 21 <sup>st</sup> , 2016
Climatic Conditions	Temp:19.0 °CRelative Humidity:31.3 %		
Notes	Downlink Signal Generator Setting: -54.00dBm (-53.31dBm measured sign	al generator out	put)
	Amplifier Output: <b>27.31dBm</b> Gain: <b>80.62dB</b>		

<b>KEY</b>	SIGHT	Input: RF Coupling: AC	Input Z: 50 Ω Corrections: Off	Atten: 20 dB Preamp: Off	PNO: Best Wide Gate: Off	Avg Type: Log-Power Trig: Free Run	1 M	2 ₩	₩.	-4 ₩	₩	₩
xI	Ŷ	Align: Auto	Freq Ref: Int (S)		IF Gain: Low Sig Track: Off		P	14	N	М	N	N
Spec	trum	*	ne and a share and a second	and a proper provide and a start of the star	Ref Lvi Offset 30		nanata ana si sana an		N	1kr1	855.500	
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50.0												
	r 855.50 BW 100				#Video BW 300	kHz	I		IS	weep 1	Span 1.0 .00 ms (1	

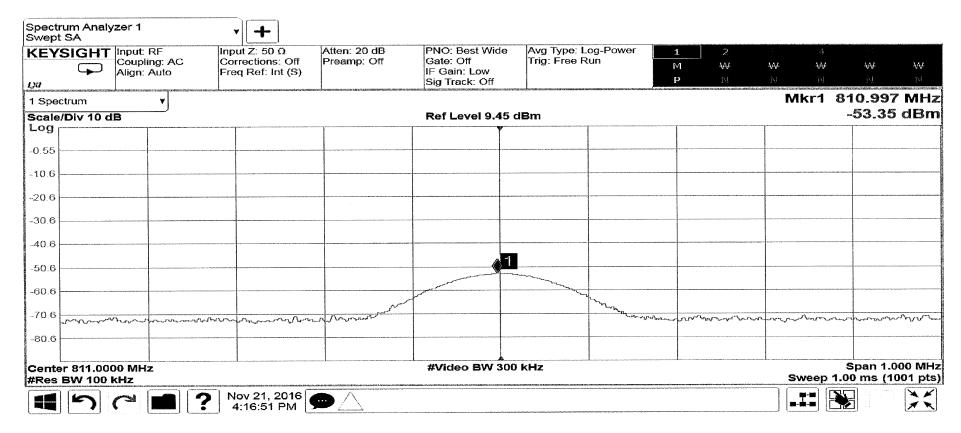
# **RETLIF TESTING LABORATORIES**

		NAIOP	
Test Method	AGC Threshold		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying CW signal at 855.5 MHz, AGC Activated		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 21 <sup>st</sup> , 2016
<b>Climatic Conditions</b>	Temp:19.0 °CRelative Humidity:31.3 %		
Notes	Downlink with AGC Signal Generator Setting: -51.00dBm (-50.31dBm mea	asured signal gen	nerator output)
	Amplifier Output: 27.39dBm Gain: 77.70dB		



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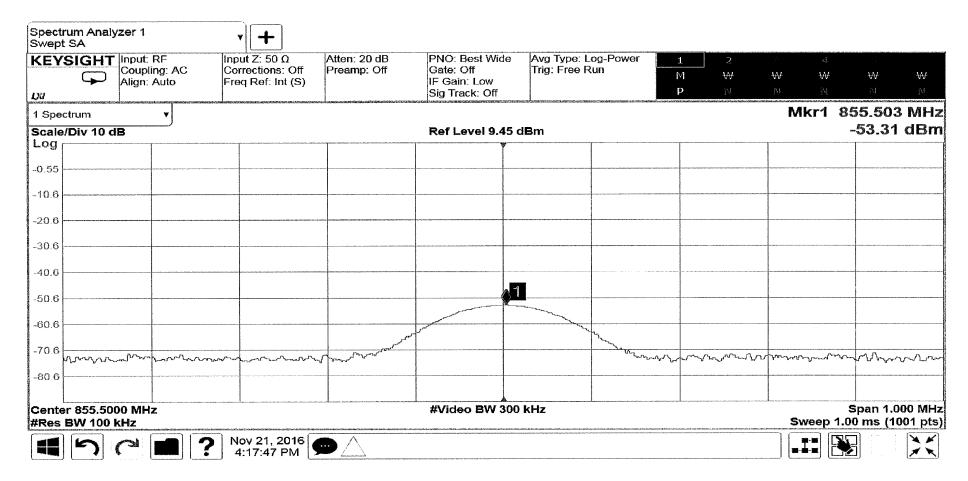
		<b>NAI UI</b>	
Test Method	Mean Output Power and Amplifier-Booster Gain		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Signal Generator Output Measurement at 811 MHz		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 21 <sup>st</sup> , 2016
<b>Climatic Conditions</b>	Temp:19.0 °CRelative Humidity:31.3 %		
Notes	Signal Generator Output: -53.35dBm		



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<b>RETLIF TESTING LABORATORIES</b>
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Test Method	Mean Output Power and Amplifier-Booster Gain		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Signal Generator Output Measurement at 855.5 MHz		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 21 <sup>st</sup> , 2016
<b>Climatic Conditions</b>	Temp:19.0 °CRelative Humidity:31.3 %		
Notes	Signal Generator Output: -53.31dBm		



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#### Test Photographs Noise Figure Measurements



**Test Configuration** 



**Retlif Testing Laboratories** 

Report No. R-6142N-1, Rev. A

Noise Figure Measurements Test Data

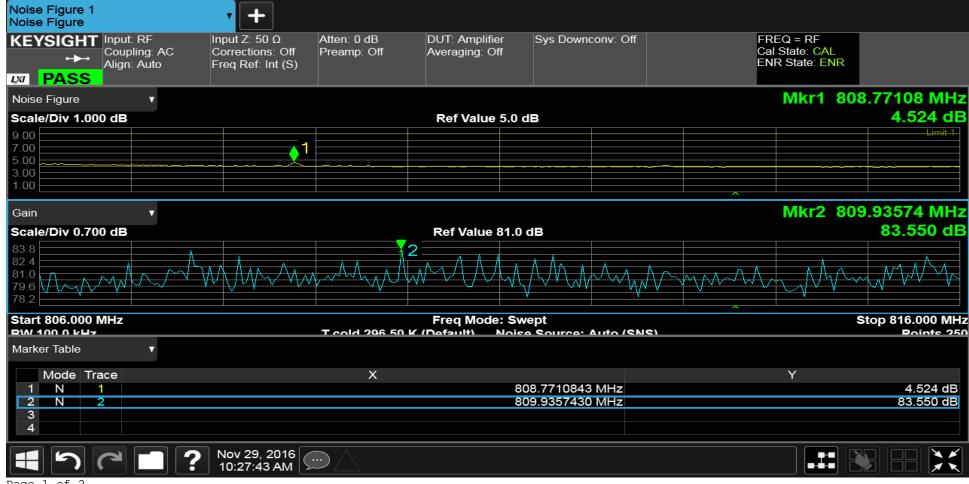


**Retlif Testing Laboratories** 

Report No. R-6142N-1, Rev. A

# DETI IE TESTINC I ADODATODIES

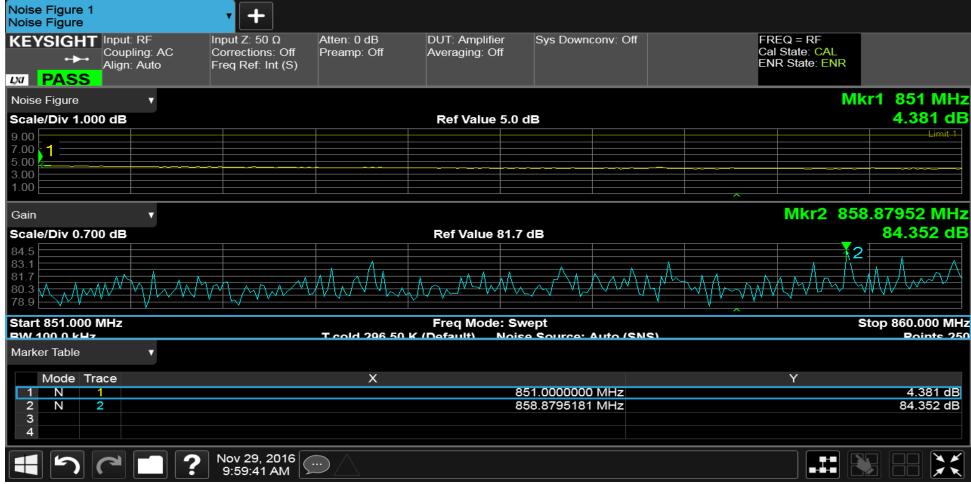
	KEILIF IESIING LADU	MAIUN	
Test Method	Noise Figure		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 29 <sup>th</sup> , 2016
<b>Climatic Conditions</b>	Temp:20.6 °CRelative Humidity:28.6 %		
Notes	Uplink Noise Figure: 4.524dB Gain: 83.55dB		



Page 1 of 2

# DETLIE TESTINC I ADODATODIES

KEILIF IESTING LADUKATURIES			
Test Method	Noise Figure		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying signals		
<b>Test Specification</b>	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 29 <sup>th</sup> , 2016
<b>Climatic Conditions</b>	Temp:20.6 °CRelative Humidity:28.6 %		
Notes	Downlink Noise Figure: 4.381dB Gain: 84.352dB		



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Out of Band/Out of Block, Test Setup



Spurious Emissions Conducted, Test Setup



**Retlif Testing Laboratories** 



Spurious Emissions, Radiated, Test Setup



Spurious Emissions, Biconical, 30 MHz to 200 MHz, Horizontal Polarization



**Retlif Testing Laboratories** 



Spurious Emissions, Biconical, 30 MHz to 200 MHz, Vertical Polarization



Spurious Emissions, Log Periodic, 200 MHz to 1 GHz, Horizontal Polarization



**Retlif Testing Laboratories** 



Spurious Emissions, Log Periodic, 200 MHz to 1 GHz, Vertical Polarization



Spurious Emissions, Double Ridge Guide, 1-10 GHz, Horizontal Polarization



**Retlif Testing Laboratories** 



Spurious Emissions, Double Ridge Guide, 1-10 GHz, Vertical Polarization



**Retlif Testing Laboratories** 

### Measuring Out-of-Band/Out-of-Block (including intermodulation) Emissions and Spurious Emissions Test Data



**Retlif Testing Laboratories** 

Measuring Out-of-Band/Out-of-Block Test Data

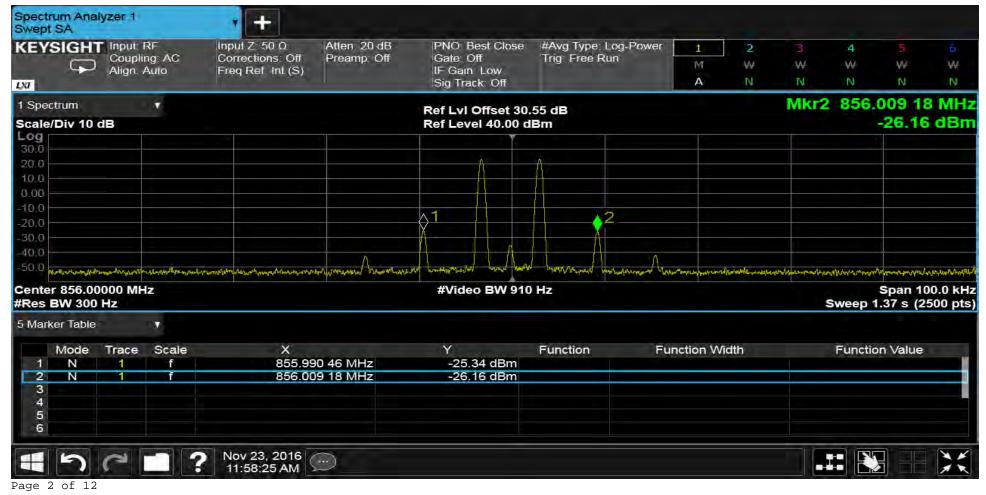


**Retlif Testing Laboratories** 

		MAION	
Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
Operating Mode	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23 <sup>rd</sup> , 2016
Climatic Conditions	Temp:20.1 °CRelative Humidity:28.3 %		
Notes	Downlink: Multi-tone CW signals; 855.996875 MHz and 856.003125 MHz		
	4K00F1E FM 6.25kHz		

Spec Swep	trum Ana It SA	lyzer 1		* +											
KEY	SIGH	Input i	RF	Input Z: 50 Ω	Atten: 20 dB	PNO: Bes	st Close	#Avg Type: Log-Po	ower	1	2	3	4	5	ō.
		Coupli Align:		Corrections: Off Freq Ref: Int (S)	Preamp: Off	Gate: Off IF Gain: L	ow	Trig: Free Run		M	-444	444	₩4	444	₩
LNI		, uigro ,	- turto	rad rate in (e)		Sig Track				А	N	N	N	N	N
1 Spe	ectrum					Ref LvI Of	feat 30	55 dB				Mkr2	856	.009 1	8 MHz
Scal	e/Div 10	dB				Ref Level								-22.84	4 dBm
Log							Y								
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	er 856.00 BW 300		lz			#Video	BW 910	Hz					Sweep		00.0 kHz 500 pts)
5 Ma	ker Table														
	Mode	Trace	Scale	X		Y		Function	Fun	ction Wi	idth		Functi	on Value	
1	N	1	f		90 46 MHz	-22.30									
2	N	1	f	856.00	09 18 MHz	-22.84	dBm								
4															
5															
6															
	5	2		Nov 23, 2016 11:54:53 AM	)										X
				11:54:53 AM											XX
Page	1 of 12														

Test Method	Out-of-Band/Out-of-Block						
Customer	Westell, Inc.	Job No.	R-6142N-1				
Test Sample	Bi-Directional Amplifier						
Model Number	BDA510-S8	Serial No.	CPG62990				
<b>Operating Mode</b>	Amplifying Mutli-tone signals						
Test Specification	Nemko Test Plan 317856-2						
Technician	M. Seamans	Date	November 23rd, 2016				
Climatic Conditions	Temp:20.1 °CRelative Humidity:28.3 %						
Notes	Downlink: Multi-tone CW signals; 855.996875 MHz and 856.003125 MHz						
	4K00F1E FM 6.25kHz AGC Activated						

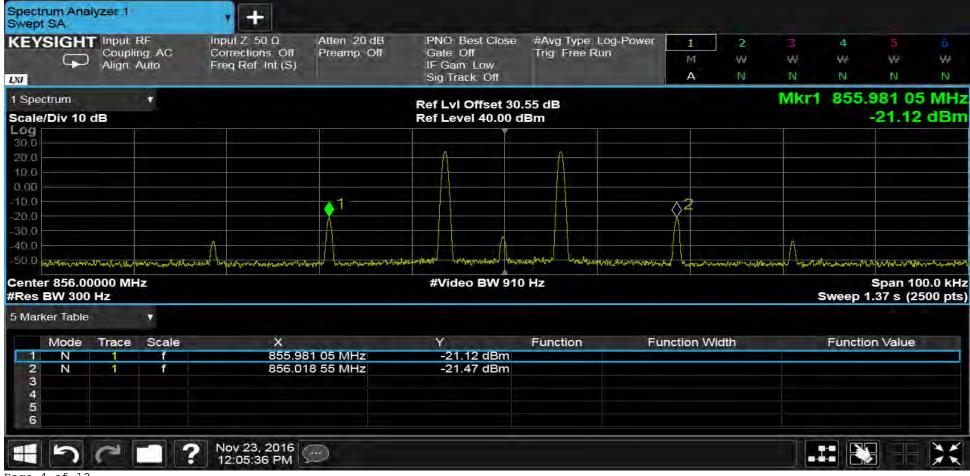


Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
Operating Mode	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
<b>Climatic Conditions</b>	Temp: 20.1 °C Relative Humidity: 28.3 %		
Notes	Downlink: Multi-tone CW signals; 855.993750 MHz and 856.006250 MHz		
	11K3F3E FM 12.5kHz		



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Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
<b>Climatic Conditions</b>	Temp:20.1 °CRelative Humidity:28.3 %		
Notes	Downlink: Multi-tone CW signals; 855.993750 MHz and 856.006250 MHz		
	11K3F3E FM 12.5kHz AGC Activated		



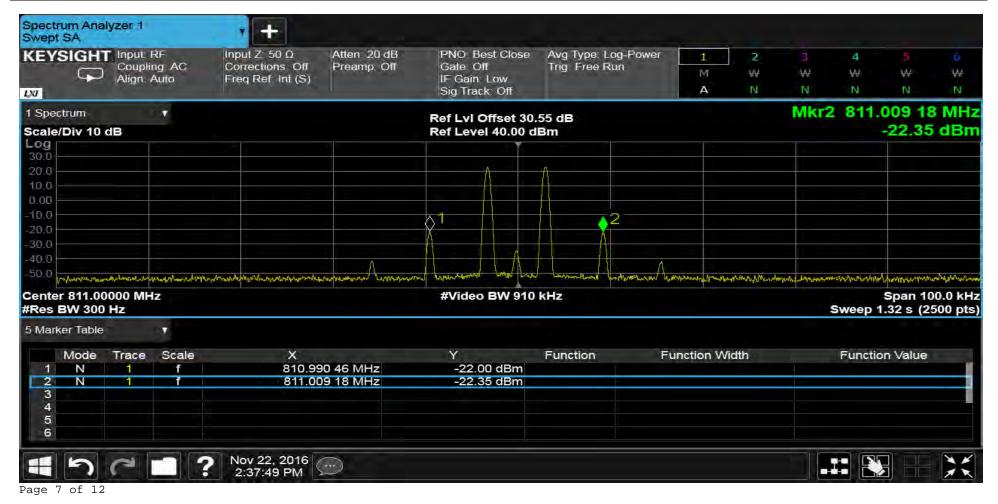
Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
Climatic Conditions	Temp:20.1 °CRelative Humidity:28.3 %		
Notes	Downlink: Multi-tone CW signals; 855.98750 MHz and 856.012500 MHz		
	16K0F3E FM 25kHz		

Spect	rum Ana t SA	liyzer 1		* +										
		T Input	RF	Input Z: 50 Ω	Atten: 20 dB	PNO Best Close	#Avg Type: Log-Po	ower	1	2	3	4	5	ō.
		Align	ng: AC	Corrections: Off Freq Ref: Int (S)	Preamp: Off	Gate: Off IF Gain: Low	Trig: Free Run		M	₩	444	₩	₩	₩
LNJ		7 ugn. 7	ruio	i rog nor in (5)		Sig Track: Off			А	N	N	N	N	N
1 Spe	ctrum					Ref LvI Offset 30	55 dB				Mkr2	856.	037 3	1 MHz
Scale	Div 10	dB				Ref Level 40.00 c							-22.84	4 dBm
Log						Ť								
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-40.0														
-50.0	when my later	anotherstore	and lowership	harmon the all was a provident the	at manufacture to	winderstanding and and and and and and		-women us	monter	to an and a second	at so for a line and the	more president	- Battan and Mary	a Manuschill and a
	er 856.0 BW 300	0000 MH Hz	łz	1		#Video BW 91	0 Hz		-					00.0 kHz 2500 pts)
5 Mar	ker Table	-												
	Mode	Trace	Scale	x		Ŷ	Function	Fun	ction Wi	dth		Functio	on Value	
1	N	1	f		62 32 MHz	-22.67 dBm			- ac-caso 403					
2	N	1	f	856.03	37 31 MHz	-22.84 dBm								
4														
5														
6														
				Nov 23, 2016										
	5	C		12:09:35 PM										1
Page	5 of 12													

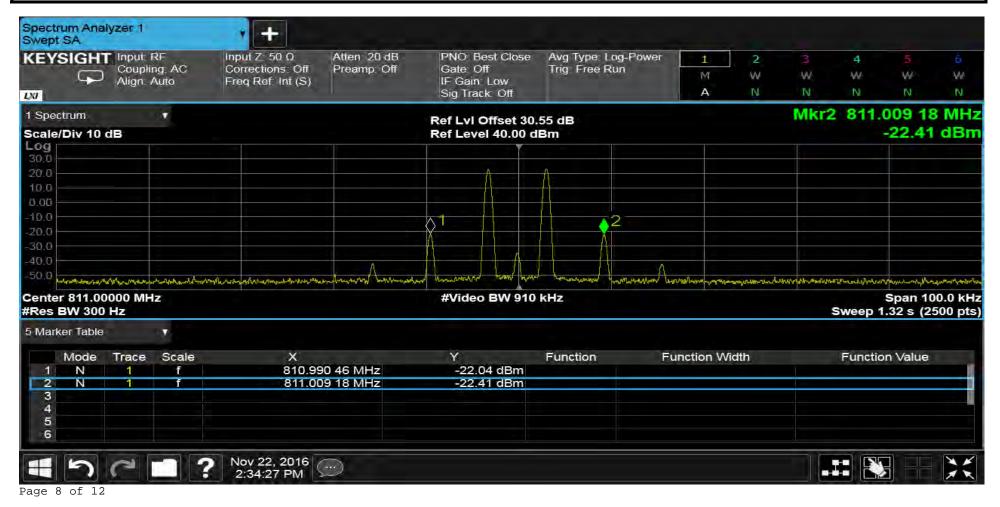
		MAION	
Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
Operating Mode	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
Climatic Conditions	Temp:20.1 °CRelative Humidity:28.3 %		
Notes	Downlink: Multi-tone CW signals; 855.98750 MHz and 856.012500 MHz		
	16K0F3E FM 25kHz AGC Activated		

Spec	trum Ana ot SA	lyzer 1		* +									
		T Input I Coupli Align	ng: AC	Input Ζ: 50 Ω Corrections: Off Freq Ref. Int (S)	Atten 20 dB Preamp Off	PNO: Best Close Gate: Off IF Gain: Low	#Avg Type: Log-Powe Trig: Free Run	M	2 ₩	3 ₩	4 ₩	5 ₩	6 ₩
LNI	_					Sig Track: Off		A	N	N	N	N	N
1 Sp	ectrum					Ref LvI Offset 30	.55 dB			Mkr2			1 MHz
	e/Div 10	dB				Ref Level 40.00 d	IBm					-21.07	dBm
Log 30.0			-										
20.0					Α		A						
10.0		_					A						
0.00		_											
-10.0											- 62		
-20.0			A								Á		
-40.0	-					A					—Д		
-50.0	without	Malau Angen	mal Manner	Jon Land and Maray and police of the generation of	Atmosphenik and have been	monormany worked that	why manustration was	Willing good What by to good you	- There are a state	alter and a state of the	month the	and the party of the second	er falt have for an the se
	er 856.0 BW 300	0000 MH Hz	iz			#Video BW 910	) Hz						00.0 kHz 500 pts)
5 Ma	rker Table												
1	Mode N	Trace	Scale f	X 855.90	62 32 MHz	Y -20.89 dBm	Function i	Function Wi	dth		Functio	on Value	
2		1	f		37 31 MHz	-21.07 dBm							
3 4 5 6													
Page	6 of 12	3		Nov 23, 2016 12:12:45 PM									X

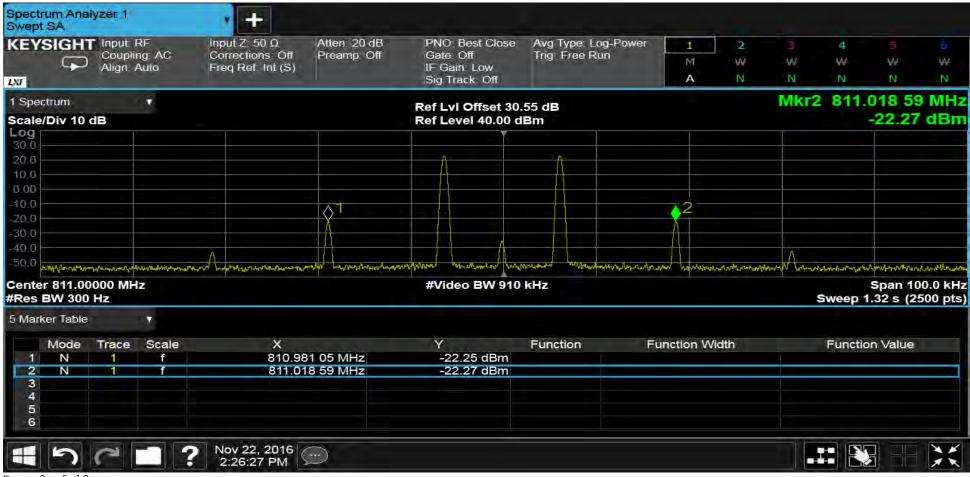
Test Method	Out-of-Band/Out-of-Block									
Customer	Westell, Inc.	Job No.	R-6142N-1							
Test Sample	Bi-Directional Amplifier									
Model Number	BDA510-S8	Serial No.	CPG62990							
<b>Operating Mode</b>	Amplifying Mutli-tone signals									
Test Specification	Nemko Test Plan 317856-2									
Technician	M. Seamans	Date	November 23 <sup>rd</sup> , 2016							
<b>Climatic Conditions</b>	Temp:20.1 °CRelative Humidity:28.3 %									
Notes	Uplink: Multi-tone CW signals; 810.996875 MHz and 811.003125 MHz									
	4K00F1E FM 6.25kHz									



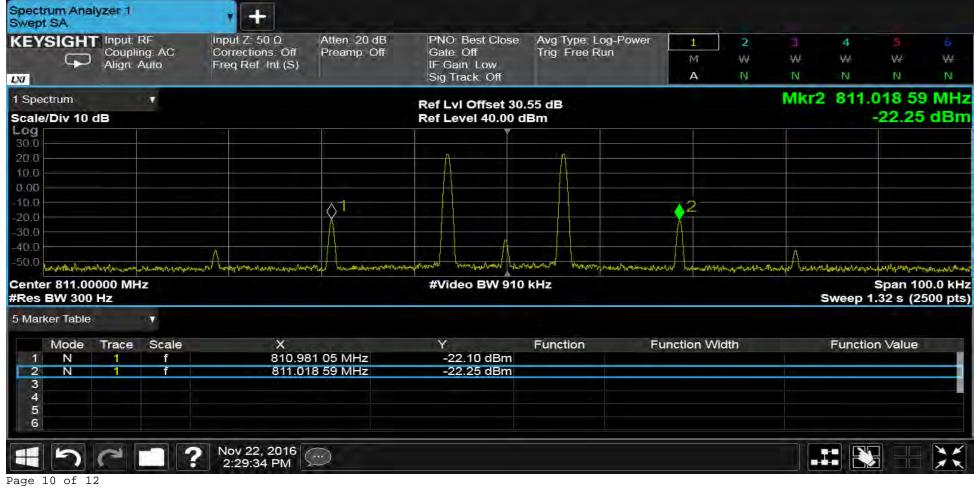
Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23 <sup>rd</sup> , 2016
<b>Climatic Conditions</b>	Temp:20.1 °CRelative Humidity:28.3 %		
Notes	Uplink: Multi-tone CW signals; 810.996875 MHz and 811.003125 MHz		
	4K00F1E FM 6.25kHz AGC Activated		



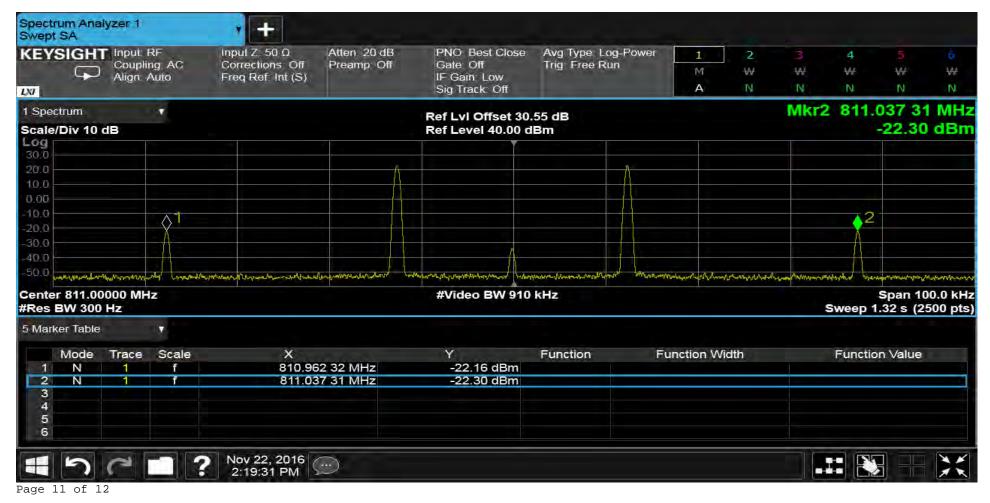
Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
<b>Climatic Conditions</b>	Temp:20.1 °CRelative Humidity:28.3 %		
Notes	Uplink: Multi-tone CW signals; 810.993750 MHz and 811.003125 MHz		
	11K3F3E FM 12.5kHz		



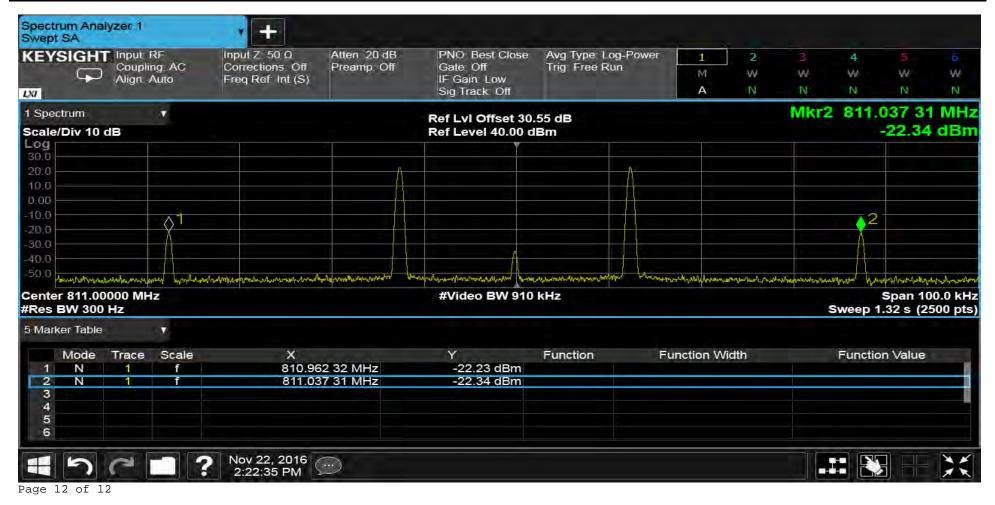
		MAION	
Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
<b>Climatic Conditions</b>	Temp: 20.1 °C Relative Humidity: 28.3 %		
Notes	Uplink: Multi-tone CW signals; 810.993750 MHz and 811.003125 MHz		
	11K3F3E FM 12.5kHz AGC Activated		



		MAIUN	
Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
<b>Climatic Conditions</b>	Temp: 20.1 °C Relative Humidity: 28.3 %		
Notes	Uplink: Multi-tone CW signals; 810.98750 MHz and 811.012500 MHz		
	16K0F3E FM 25kHz		



Test Method	Out-of-Band/Out-of-Block		
Customer	Westell, Inc.	Job No.	R-6142N-1
Test Sample	Bi-Directional Amplifier		
Model Number	BDA510-S8	Serial No.	CPG62990
<b>Operating Mode</b>	Amplifying Mutli-tone signals		
Test Specification	Nemko Test Plan 317856-2		
Technician	M. Seamans	Date	November 23rd, 2016
<b>Climatic Conditions</b>	Temp: 20.1 °C Relative Humidity: 28.3 %		
Notes	Uplink: Multi-tone CW signals; 810.98750 MHz and 811.012500 MHz		
	16K0F3E FM 25kHz AGC Activated		

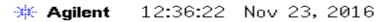


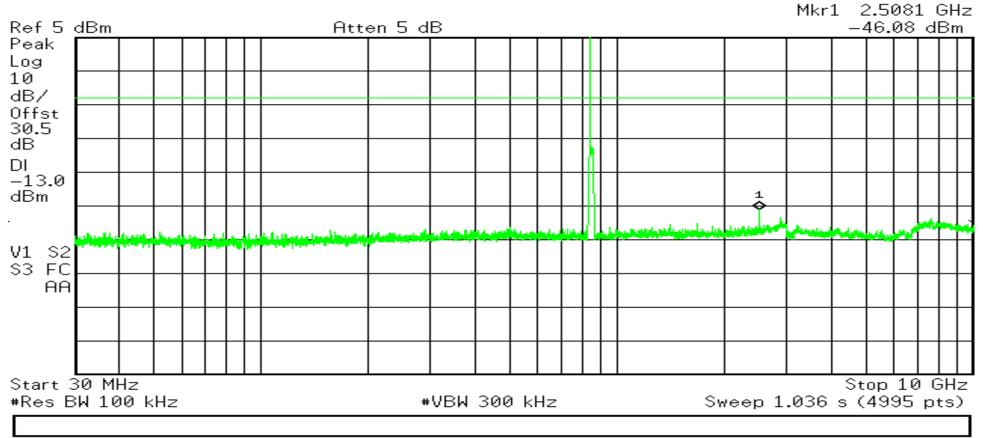
Spurious Emissions Conducted Test Data



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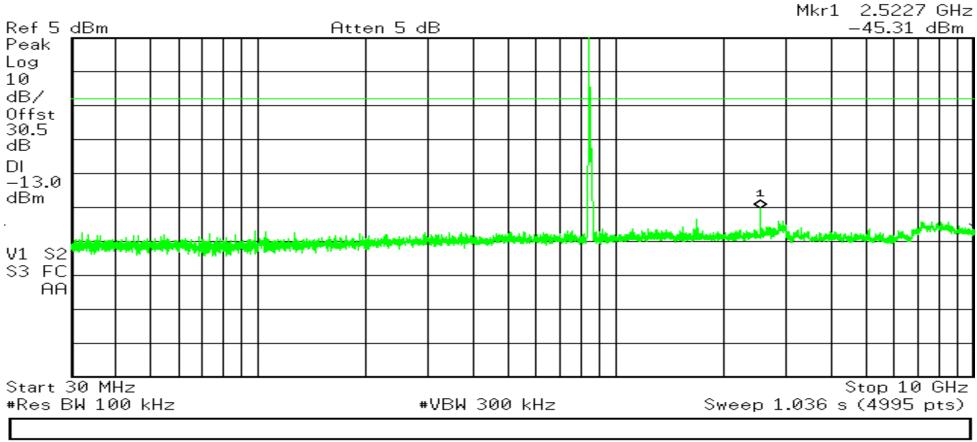
Test Method	Spurious Emissions Conducted				
Customer	Westell, Inc.	Job No.	R-6142N-1		
Test Sample	Bi-Directional Amplifier				
Model Number	BDA510-S8	Serial No.	CPG62990		
Operating Mode	Amplifying CW signals				
Test Specification	Nemko Test Plan 317856-2				
Technician	M. Seamans Date November 23 <sup>rd</sup> , 2016				
Climatic Conditions	Temp: 20.1 °C Relative Humidity: 28.3 %				
Notes	Downlink: 851.00625 MHz				



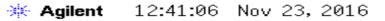


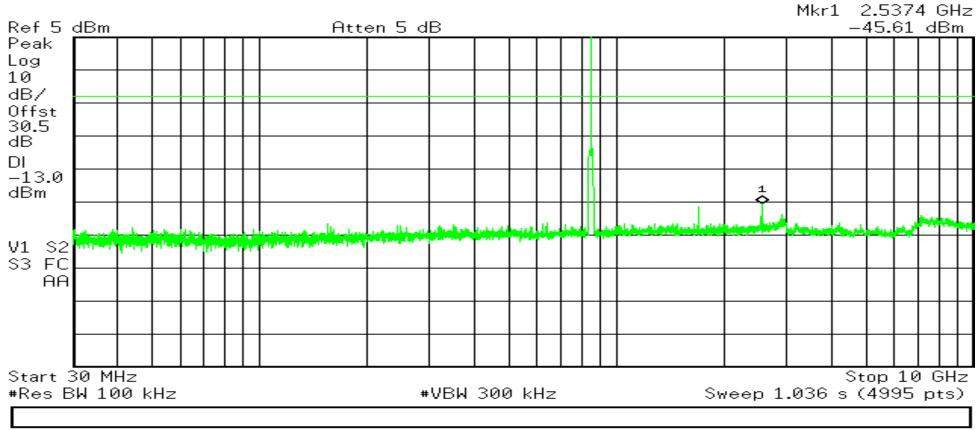
	RETLIF TESTING LABORATORIES					
Test Method	Spurious Emissions Conducted					
Customer	Westell, Inc.	Job No.	R-6142N-1			
Test Sample	Bi-Directional Amplifier					
Model Number	BDA510-S8	CPG62990				
Operating Mode	Amplifying CW signals	Amplifying CW signals				
Test Specification	Nemko Test Plan 317856-2					
Technician	M. Seamans	Date	November 23rd, 2016			
Climatic Conditions	Temp:20.1 °CRelative Humidity:28.3 %					
Notes	Downlink: 856.00000 MHz					

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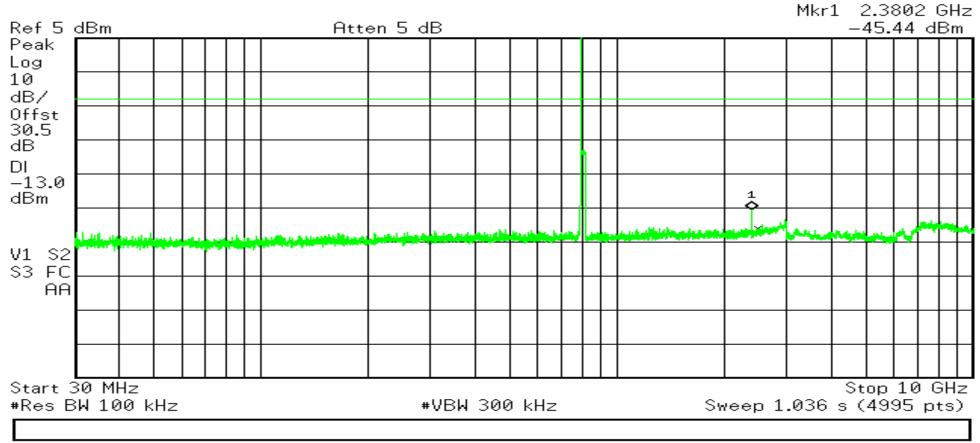
<b></b> RETLIF TESTING LABORATORIES <b></b>					
Test Method	Spurious Emissions Conducted				
Customer	Westell, Inc.	Job No.	R-6142N-1		
Test Sample	Bi-Directional Amplifier				
Model Number	BDA510-S8	Serial No.	CPG62990		
<b>Operating Mode</b>	Amplifying CW signals				
Test Specification	Nemko Test Plan 317856-2				
Technician	M. Seamans	Date	November 23rd, 2016		
<b>Climatic Conditions</b>	Temp:20.1 °CRelative Humidity:28.3 %				
Notes	Downlink: 860.993750 MHz				





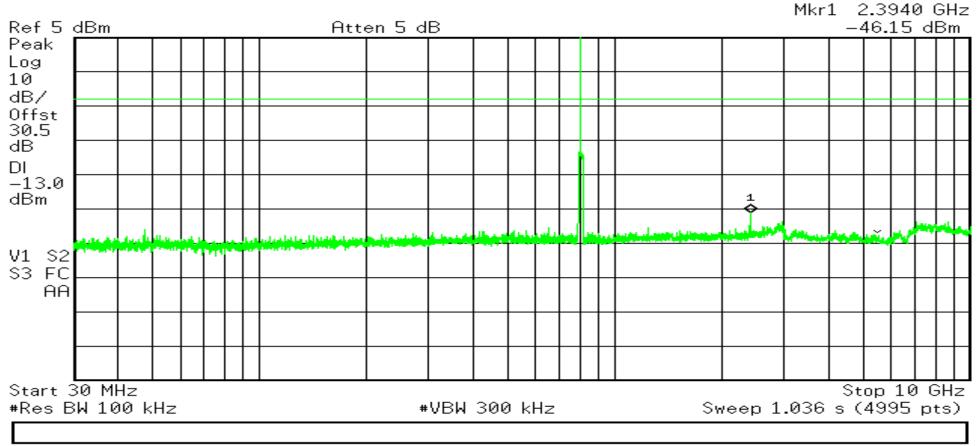
_	<b>RETLIF TESTING LABC</b>	ORATOR	RIES ———		
Test Method	Spurious Emissions Conducted				
Customer	Westell, Inc.	Job No.	R-6142N-1		
Test Sample	Bi-Directional Amplifier				
Model Number	BDA510-S8	Serial No.	CPG62990		
<b>Operating Mode</b>	Amplifying CW signals				
Test Specification	Nemko Test Plan 317856-2				
Technician	M. Seamans	Date	November 23rd, 2016		
Climatic Conditions	Temp:20.1 °CRelative Humidity:28.3 %				
Notes	Uplink: 806.00625 MHz				

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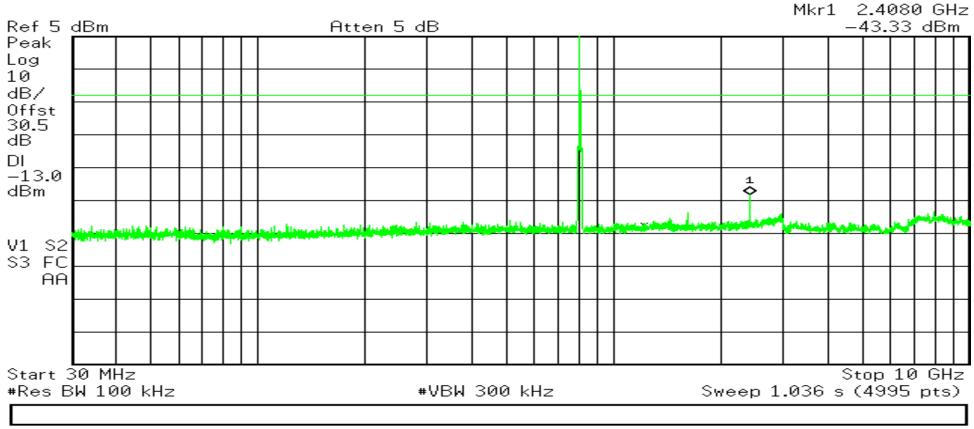
<b>RETLIF TESTING LABORATORIES</b>						
Test Method	Spurious Emissions Conducted					
Customer	Westell, Inc.	Job No.	R-6142N-1			
Test Sample	Bi-Directional Amplifier					
Model Number	BDA510-S8	Serial No.	CPG62990			
<b>Operating Mode</b>	Amplifying CW signals	Amplifying CW signals				
Test Specification	Nemko Test Plan 317856-2					
Technician	M. Seamans	Date	November 23rd, 2016			
<b>Climatic Conditions</b>	Temp:20.1 °CRelative Humidity:28.3 %					
Notes	Uplink: 811.00000 MHz					

### **Agilent** 12:49:15 Nov 23, 2016



	<b>EXAMPLE 1 RETLIF TESTING LABORATORIES</b>					
Test Method	Spurious Emissions Conducted					
Customer	Westell, Inc.	Job No.	R-6142N-1			
Test Sample	Bi-Directional Amplifier					
Model Number	BDA510-S8	Serial No.	CPG62990			
<b>Operating Mode</b>	Amplifying CW signals	Amplifying CW signals				
Test Specification	Nemko Test Plan 317856-2					
Technician	M. Seamans	Date	November 23rd, 2016			
<b>Climatic Conditions</b>	Temp:20.1 °CRelative Humidity:28.3 %					
Notes	Uplink: 815.99375 MHz					

#### **Agilent** 12:52:37 Nov 23, 2016



Page 6 of 6

Field Strength of Spurious Emissions Test Data



**Retlif Testing Laboratories** 

i					
	<b>EXAMPLE 1</b> RETLIF TESTING LABORATORIES				
	EMISSIONS TEST DATA SHEET				
Test Method	Spurious Emissions Radiated				
Customer	Westell, Inc.				
Job Number	R-6142N-1				
Test Sample	Bi-Directional Amplifier				
Model Number	BDA510-S8				
Serial Number	CPG62990				
Test Specification	Nemko Test Plan 317856-2				
Operating Mode	Amplifying signals				
Technician	M. Seamans				
Date	December 2 <sup>nd</sup> , 2016				
Notes: Antenna Test Dist	ance: 3 meters				
Detector: Peak	Detector: Peak				

Input frequencies tested: (Downlink) 851.00625 MHz, 856.000 MHz, 860.993750 MHz, (Uplink) 806.00625 MHz, 811.000MHz, 815.99375 MHz

	TEST PARAMETERS						
Frequency	Antenna Position	Antenna Ref Level	Signal Gen Level				Limit
MHz	(H/V) / Position	dBuV	dBm				dBm
30.00	-	-	-				-13.00
	-	-	-				
	-	-	-				
	-	-	-				
	-	-	-				
	-	-	-				
	-	-	-				
	-	-	-				
10000.00	-	-	-				-13.00

No EUT emissions within 20 dB of the specified test limit were observed at the specified test distance throughout the given frequency spectrum.

Data Sheet 1 of 1



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