Wan7com, Inc.

820-960 MHz LOW NOISE POWER AMPLIFIER WLPA08-1555A[1]

WLPA08-1555A is a very low noise figure and supper high linearity balance amplifier with unconditional stable design. The amplifier, using Wan7com proprietary technology, offers noise figure of 1.1 dB and minimum output IP3 of 53 dBm at the frequency range from 820 MHz to 960 MHz. Linearity-Power-Noise-Figure-Index (LPNFI) of the amplifier reaches 16 dB. WLPA08-1555A is most suitable for the applications of cellular base stations, tower top amplifiers, cellular micro-cells, and last-mile wireless communications.

Key Features:

Balance Amplifier, Unconditional Stability.

Low Noise:	1.2 dB
Output IP3:	53.0 dBm
Gain:	16 dB
P_{1dB}:	33 dBm
Current Consumption:	450 mA @ +12 V
Frequency Range:	820 – 960 MHz
Operating Temperature:	-40 – +85 ºC
Alarm Output:	Soft Alarm, Hard Alarm, Soft Alarm Open Collector, Hard Alarm Open Collector, Branch 1 Alarm, Branch 2 Alarm.

Specifications:

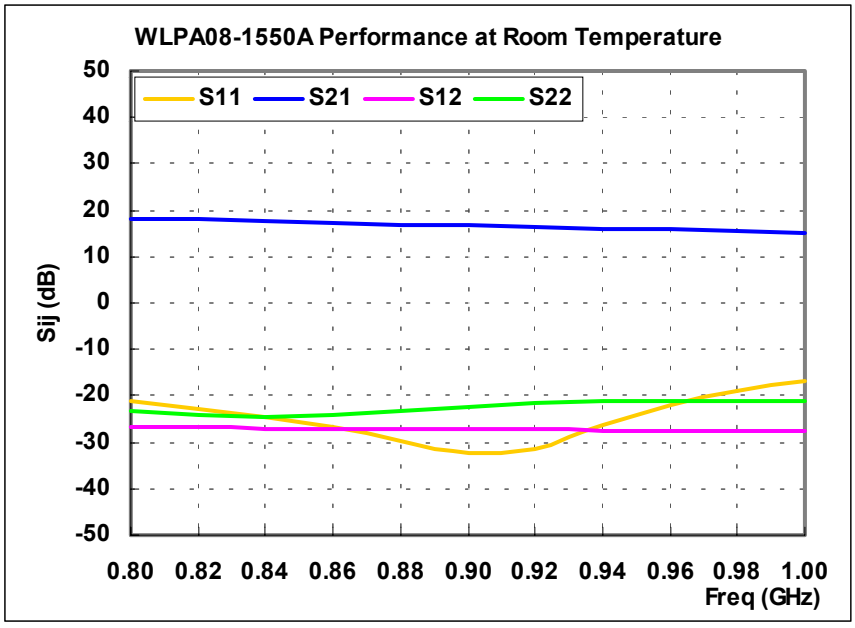

FIG. 1 Typical small signal performance of WLPA08-1555A

[1] Specifications are subject to change without notice.

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Table 1 Summary of the electrical specifications WLPA08-1555A at room temperature

Index	Testing Item	Symbol	Test Constraints	Unit	Nom(RT)	Min	Max	Unit
1	Gain	S21	820- 960	MHz	16	15	18	dB
2	Gain Variation	ΔG	820- 960	MHz	2		3	dB
3	Input Return Loss	S11	820- 960	MHz	18	16		dB
4	Output Return Loss	S22	820- 960	MHz	18	16		dB
5	Reverse Isolation	S12	820- 960	MHz	26	25		dB
6	Noise Figure	NF	820- 960	MHz	1.2		1.4	dB
7	Output P1dB compression	P1dB	820- 960	MHz	33	31		dBm
8	Output-Third-Order Interception point	TOIP3	Two-Tone, 15dBm each at output, 1 MHz separation	MHz	53	50		dBm
9	Linearity-Power-Noise-Figure Index	LPNFI	820- 960	MHz	16			dB
10	Current Consumption	Idd	Vdd= +12	V	450		480	mA
11	Power Supply Voltage	Vdd			+12	11	15	V
12	Soft Alarm TTL Output	Vs	Normal/Fail, +/- 30% Id1 or Id2	V	5.0/0.0			V
	Soft Alarm Open Collector Output	Vso	Normal/Fail, External 10K to an external +Vcc	V	Low/High			
	Hard Alarm TTL Output	Vh	Normal/Fail, +/- 30% Idd	V	5.0/0.0			V
	Hard Alarm Open Collector Output	Vho	Normal/Fail, External 10K to an external +Vcc		Low/High			
	Branch 1 Alarm TTL Output	Va1	Normal/Fail, +/- 30% Id1	V	5.0/0.0			V
	Branch 2 Alarm TTL Output	Va2	Normal/Fail, +/- 30% Id2	V	5.0/0.0			V
13	Maximum RF Input Power	Pinmax	820- 960, single tone	MHz		20		dBm

Mechanical Outline: WP-1

Small Signal S-Parameters:

! FILE NAME: WLPA08-1555A.S2P
! DATE: 05/02
! BIAS CONDITIONS: VDS=12V, IDS=450mA
GHZ S MA R 50

0.1	0.50	175.7	0.22	-51.5	0.0003	-125.0	0.98	-40.9
0.2	0.55	114.8	0.81	-95.0	0.0012	-175.3	0.92	-96.4
0.3	0.48	20.8	2.69	-138.0	0.0053	137.8	0.36	-164.0
0.4	0.52	-130.5	6.18	143.3	0.0170	64.7	0.17	-67.8
0.5	0.53	123.9	8.04	73.0	0.0280	-1.5	0.30	-124.8
0.6	0.36	61.3	9.86	2.9	0.0410	-68.5	0.15	-150.9
0.7	0.23	-3.9	9.46	-64.1	0.0460	-131.7	0.13	-156.6
0.8	0.09	-100.8	8.08	-123.2	0.0460	171.8	0.07	-161.6
0.9	0.02	-144.0	6.84	-176.5	0.0430	121.8	0.08	-135.0
1	0.15	-122.5	5.80	131.9	0.0410	74.1	0.09	-141.3
1.1	0.34	-171.9	4.73	82.6	0.0380	25.7	0.08	-130.9
1.2	0.50	143.6	3.80	35.6	0.0340	-18.9	0.14	-128.2
1.3	0.59	104.9	3.21	-8.1	0.0310	-61.4	0.22	-148.7
1.4	0.64	72.5	2.93	-52.3	0.0310	-103.8	0.30	-176.3
1.5	0.75	38.8	2.53	-104.8	0.0300	-150.4	0.35	149.5
1.6	0.81	-7.6	1.93	-153.0	0.0250	170.1	0.32	114.2
1.7	0.79	-60.2	1.75	161.0	0.0250	126.2	0.27	82.6
1.8	0.73	-123.5	1.66	108.1	0.0250	74.0	0.20	50.0
1.9	0.67	167.1	1.39	48.9	0.0210	18.7	0.12	20.4

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2	0.63	102.4	0.99	4.5	0.0180	-16.5	0.22	-16.7
2.1	0.57	48.5	0.89	-47.2	0.0180	-69.9	0.25	-97.5
2.2	0.47	1.1	0.74	-96.8	0.0160	-116.2	0.34	-146.6
2.3	0.33	-45.0	0.64	-143.8	0.0130	-159.4	0.44	176.8
2.4	0.14	-98.6	0.55	171.5	0.0095	-174.6	0.54	144.7
2.5	0.07	104.4	0.46	131.4	0.0170	144.7	0.53	121.0
2.6	0.23	37.4	0.41	81.1	0.0190	63.6	0.65	101.1
2.7	0.35	-6.4	0.37	33.7	0.0089	11.7	0.70	75.7
2.8	0.43	-51.2	0.38	-13.3	0.0087	-27.5	0.67	49.1
2.9	0.49	-104.4	0.34	-64.4	0.0077	-79.4	0.56	22.4
3	0.52	-172.9	0.25	-116.7	0.0071	-139.1	0.36	6.3
3.1	0.58	111.7	0.16	-165.7	0.0060	162.3	0.25	13.4
3.2	0.63	48.0	0.10	157.5	0.0046	111.7	0.26	26.8
3.3	0.67	0.3	0.07	124.9	0.0049	80.2	0.31	24.4
3.4	0.70	-37.7	0.05	91.1	0.0055	44.5	0.36	14.5
3.5	0.71	-71.9	0.04	56.4	0.0071	20.3	0.37	1.5
3.6	0.71	-105.6	0.03	23.8	0.0070	-13.6	0.35	-13.1
3.7	0.66	-139.5	0.02	-6.7	0.0061	-51.0	0.30	-19.0
3.8	0.58	-172.0	0.01	-38.0	0.0066	-100.5	0.30	-22.1
3.9	0.49	155.3	0.01	-74.8	0.0046	-123.4	0.30	-26.7
4	0.39	121.9	0.00	-110.2	0.0053	-145.9	0.29	-31.8
4.1	0.30	86.9	0.01	-156.1	0.0076	-178.1	0.30	-34.7
4.2	0.21	52.1	0.01	137.8	0.0100	132.9	0.32	-38.4
4.3	0.12	23.3	0.01	70.2	0.0097	91.6	0.37	-44.1
4.4	0.08	22.2	0.01	38.2	0.0099	60.9	0.40	-54.8
4.5	0.12	22.7	0.01	25.0	0.0140	32.2	0.45	-66.5
4.6	0.16	22.1	0.01	-37.0	0.0160	-24.3	0.44	-80.1
4.7	0.27	-42.7	0.01	-57.1	0.0110	-47.6	0.46	-85.4
4.8	0.29	-87.7	0.01	-83.2	0.0100	-74.6	0.47	-98.0
4.9	0.28	-130.8	0.01	-85.6	0.0053	-101.7	0.49	-107.6
5	0.28	-177.0	0.01	-95.1	0.0045	-104.0	0.50	-119.2
5.1	0.27	130.2	0.01	-94.9	0.0050	-84.7	0.49	-131.9
5.2	0.28	71.1	0.01	-111.0	0.0062	-105.0	0.48	-143.2
5.3	0.27	15.7	0.01	-149.9	0.0067	-115.2	0.46	-155.3
5.4	0.24	-26.1	0.00	-180.0	0.0057	-146.3	0.42	-167.3
5.5	0.22	-52.0	0.00	-180.0	0.0048	-172.9	0.37	-178.3
5.6	0.21	-62.9	0.00	-180.0	0.0035	-176.4	0.32	172.2
5.7	0.25	-69.7	0.00	-180.0	0.0024	-157.0	0.25	163.4
5.8	0.33	-87.1	0.01	-127.4	0.0010	-148.9	0.18	163.8
5.9	0.40	-109.3	0.01	-174.3	0.0035	-122.5	0.15	-174.2
6	0.43	-132.9	0.01	130.9	0.0046	-175.3	0.21	-157.8