

No attempt has been made to rank the information contained in this report in order of importance, since BPA Worldwide believes this is a judgment which must be made by the user of the report.

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Since 1958, **MICROWAVE JOURNAL** has been a leading source for information about RF and Microwave technology, design techniques, news, events and educational information.

BRAND REPORT PURPOSE

The Brand Report provides a deeper understanding and identification of all audited touch points with customers that have interest in the brand. It is designed to present analysis of all communication channels, including a brand's unique users within each channel of, but not across, multiple media platforms. This non-integrated report contains data for each separate media channel as indicated in the Executive Summary. No attempt has been made to identify or eliminate duplication that may exist across media channels.

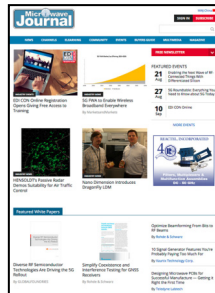
CHANNELS

MICROWAVE JOURNAL



6 issues in the period
50,000 average circulation

MICROWAVE JOURNAL WEBSITE



128,963 average users

EXECUTIVE SUMMARY

Below are the average contacts per occurrence, including frequency per period reported.

	Non-Paid	Paid	Average
MICROWAVE JOURNAL (6 issues in the period)	50,000	-	50,000
(See Paragraph 3b for Format Type and Source)			
MICROWAVE JOURNAL WEBSITE (Monthly Users with 229,260 average Pageviews)	128,963	-	128,963

3b. QUALIFICATION SOURCE BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF JUNE 2020

Qualification Source	Print	Digital	Total Qualified	Percent
I. Direct Request:	26,894	23,106	50,000	100.0
II. Request from recipient's company:	-	-	-	-
III. Membership Benefit:	-	-	-	-
IV. Communication (other than request):	-	-	-	-
V. Sources other than above, including: Association rosters and directories; Business directories; Manufacturer's, distributor's and wholesaler's lists; and Other sources:	-	-	-	-
VI. Single Copy Sales:	-	-	-	-
TOTAL QUALIFIED CIRCULATION	26,894	23,106	50,000	100.0
PERCENT	53.8	46.2	100.0	

Note: In these unprecedented times caused by the coronavirus (COVID-19) pandemic, resulting in workplace closures, sporadic workplace visits and work-from-home solutions, consent and renewal campaigns are impacted. Therefore, BPA Worldwide has granted an exception to reporting Age of Source for all 2020 reports. Although age is not reported, all qualified circulation must be sourced within 36 months of the analyzed issue.

QUALIFICATION SOURCE BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF JUNE 2020*

State	Print	Digital	Total Qualified	Percent	State	Print	Digital	Total Qualified	Percent
Maine	68	32	100		Kentucky	161	70	231	
New Hampshire	243	156	399		Tennessee	301	137	438	
Vermont	46	35	81		Alabama	231	161	392	
Massachusetts	862	622	1,484		Mississippi	110	54	164	
Rhode Island	87	48	135		EAST SO. CENTRAL	803	422	1,225	2.4
Connecticut	294	144	438		Arkansas	86	47	133	
NEW ENGLAND	1,600	1,037	2,637	5.3	Louisiana	119	69	188	
New York	1,209	673	1,882		Oklahoma	160	98	258	
New Jersey	710	417	1,127		Texas	1,229	939	2,168	
Pennsylvania	847	482	1,329		WEST SO. CENTRAL	1,594	1,153	2,747	5.5
MIDDLE ATLANTIC	2,766	1,572	4,338	8.7	Montana	66	32	98	
Ohio	875	436	1,311		Idaho	125	58	183	
Indiana	420	227	647		Wyoming	45	18	63	
Illinois	851	482	1,333		Colorado	412	332	744	
Michigan	617	357	974		New Mexico	168	115	283	
Wisconsin	418	175	593		Arizona	441	429	870	
EAST NO. CENTRAL	3,181	1,677	4,858	9.7	Utah	218	147	365	
Minnesota	417	210	627		Nevada	111	72	183	
Iowa	190	112	302		MOUNTAIN	1,586	1,203	2,789	5.6
Missouri	308	163	471		Alaska	40	32	72	
North Dakota	54	24	78		Washington	416	318	734	
South Dakota	72	31	103		Oregon	253	206	459	
Nebraska	133	51	184		California	3,237	2,601	5,838	
Kansas	195	116	311		Hawaii	42	31	73	
WEST NO. CENTRAL	1,369	707	2,076	4.1	PACIFIC	3,988	3,188	7,176	14.4
Delaware	60	32	92		UNITED STATES	20,687	13,234	33,921	67.8
Maryland	620	408	1,028		U.S. Territories	29	27	56	
Washington, DC	88	65	153		Canada	211	437	648	
Virginia	585	394	979		Mexico	23	79	102	
West Virginia	78	41	119		Other International	5,939	9,325	15,264	
North Carolina	548	291	839		APO/FPO	5	4	9	
South Carolina	227	122	349						
Georgia	513	279	792						
Florida	1,081	643	1,724						
SOUTH ATLANTIC	3,800	2,275	6,075	12.1					
					TOTAL QUALIFIED CIRCULATION	26,894	23,106	50,000	100.0

*See Additional Data

GEOGRAPHICAL BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF JUNE 2020*

Region/Country	Print	Digital	Total Qualified	Percent	Region/Country	Print	Digital	Total Qualified	Percent
ASIA					AFRICA				
Afghanistan	-	2	2		Spain	172	309	481	
Armenia	2	4	6		Sweden	110	190	300	
Azerbaijan	2	1	3		Switzerland	115	123	238	
Bangladesh	70	16	86		Turkey	127	208	335	
Bhutan	1	-	1		Ukraine	14	45	59	
Brunei Darussalam	-	2	2		United Kingdom	1,988	1,586	3,574	
Cambodia	-	2	2		unspecified Europe	1	5	6	
China	56	411	467		Subtotal	4,612	5,793	10,405	20.8
Georgia	1	1	2		AFRICA				
Hong Kong - SAR	14	58	72		Algeria	7	15	22	
India	374	693	1,067		Angola	-	2	2	
Indonesia	9	27	36		Benin	-	1	1	
Japan	149	344	493		Botswana	3	1	4	
Kazakhstan	-	2	2		Cameroon	-	2	2	
Korea, Republic Of	91	215	306		Chad	-	4	4	
Macao	-	2	2		Egypt	9	53	62	
Malaysia	35	83	118		Ethiopia	-	8	8	
Myanmar	-	4	4		Ghana	-	1	1	
Nepal	2	1	3		Kenya	1	5	6	
Pakistan	22	67	89		Liberia	-	1	1	
Philippines	17	22	39		Libyan Arab Jamahiriya	-	5	5	
Singapore	61	137	198		Madagascar	-	1	1	
Sri Lanka	6	5	11		Morocco	12	15	27	
Taiwan	59	281	340		Namibia	-	1	1	
Thailand	10	20	30		Niger	2	1	3	
Uzbekistan	-	1	1		Nigeria	10	19	29	
Vietnam	4	32	36		Rwanda	-	1	1	
unspecified Asia	-	2	2		South Africa	10	74	84	
Subtotal	985	2,435	3,420	6.9	Sudan	-	6	6	
MIDDLE EAST					Swaziland	-	1	1	
Bahrain	-	1	1		Tanzania	1	1	2	
Iran	14	68	82		Tunisia	6	14	20	
Iraq	4	12	16		Uganda	-	2	2	
Israel	81	160	241		Western Sahara	-	1	1	
Jordan	-	2	2		Zambia	-	2	2	
Kuwait	1	-	1		Zimbabwe	1	4	5	
Lebanon	3	6	9		unspecified Africa	1	-	1	
Oman	1	1	2		Subtotal	63	241	304	0.6
Qatar	1	3	4		NORTH AMERICA				
Saudi Arabia	5	26	31		Canada	211	437	648	
Syrian Arab Republic	-	9	9		Mexico	23	79	102	
United Arab Emirates	3	19	22		United States	20,721	13,271	33,992	
Yemen	1	1	2		Subtotal	20,955	13,787	34,742	69.5
unspecified Middle East	-	2	2		CARIBBEAN				
Subtotal	114	310	424	0.9	Anguilla	1	-	1	
EUROPE					Antigua and Barbuda	1	1	2	
Albania	1	1	2		Aruba	-	1	1	
Andorra	-	1	1		Cayman Islands	-	1	1	
Austria	36	58	94		Cuba	-	7	7	
Azores	3	1	4		Dominican Republic	-	3	3	
Balearic Islands	1	-	1		Haiti	-	1	1	
Belarus	5	13	18		Netherlands Antilles	-	1	1	
Belgium	137	136	273		Trinidad and Tobago	-	3	3	
Bosnia and Herzegovina	2	5	7		Subtotal	2	18	20	-
Bulgaria	32	43	75		CENTRAL AMERICA				
Croatia	9	13	22		Costa Rica	-	1	1	
Cyprus	12	12	24		El Salvador	-	2	2	
Czech Republic	41	72	113		Guatemala	-	3	3	
Denmark	52	76	128		Nicaragua	-	1	1	
Estonia	10	11	21		Panama	-	1	1	
Faroe Islands	-	2	2		unspecified Central	1	-	1	
Finland	51	92	143		Subtotal	1	8	9	-
France	308	542	850		SOUTH AMERICA				
Germany	461	706	1,167		Argentina	21	56	77	
Greece	39	78	117		Bolivia	-	5	5	
Holy See (Vatican City State)	-	1	1		Brazil	53	157	210	
Hungary	24	38	62		Chile	6	19	25	
Iceland	3	3	6		Colombia	2	26	28	
Ireland	129	125	254		Ecuador	2	14	16	
Italy	279	433	712		French Guiana	-	1	1	
Latvia	3	14	17		Paraguay	-	1	1	
Liechtenstein	-	1	1		Peru	6	24	30	
Lithuania	12	15	27		Uruguay	2	2	4	
Luxembourg	8	18	26		Venezuela	3	8	11	
Macedonia	1	6	7		Subtotal	95	313	408	0.8
Malta	2	2	4		ASIA PACIFIC				
Montenegro	-	1	1		Australia	53	166	219	
Netherlands	143	208	351		Fiji	-	2	2	
Norway	30	44	74		New Zealand	13	30	43	
Poland	68	98	166		Western Samoa	1	1	2	
Portugal	28	44	72		unspecified Asia Pacific	-	2	2	
Romania	39	53	92		Subtotal	67	201	268	0.5
Russian Federation	78	303	381		TOTAL QUALIFIED CIRCULATION				
Serbia	11	25	36		26,894	23,106	50,000	100.0	
Slovakia	11	12	23						
Slovenia	16	21	37						

*See Additional Data

WEBSITE CHANNEL

WWW.MWJOURNAL.COM

2020	Pageviews	Sessions	Users	Average Session Duration
January	257,183	187,294	144,403	0:54
February	224,736	163,651	129,669	0:54
March	235,752	169,173	131,798	0:55
April	236,903	166,026	127,789	0:59
May	219,001	157,405	126,898	0:53
June	201,987	146,155	113,224	0:56
AVERAGE:	229,260	164,950	128,963	0:55

January – June 2020 data was provided by Google Analytics. All website activity is audited by BPA Worldwide.

WEBSITE GLOSSARY

Pageviews: A Pageview is recorded each time a page implanted with the JavaScript code (tag) is displayed in a browser window. This will occur whether the page is served directly from the web server, from a proxy, or from the browser's cache.

Sessions: A single continuous set of activity attributable to a cookie browser resulting in one or more pulled text and/or graphics downloads from a site. A period of 30 minutes of inactivity will terminate the session.

Users: An identified and unduplicated Cookie Browser that accesses Internet content or advertising during a measurement period.

Average Session Duration: The time visitors remain on a site per session.

ADDITIONAL DATA

METHOD OF DISTRIBUTION:

All qualified circulation conforms to the field served and definition of recipient qualification, as reported. Print copies are distributed via postal services or other carriers. Recipients of the digital version are notified via email when the version is available.

STATEMENT OF CONTENT PLATFORM:

Editorial Replica – If a print edition exists, editorial and design are unchanged from the original print edition. Each issue's content and design are identical to the original edition. Apart from minor updates, the content cannot change once the issue is made available.

GEOGRAPHIC DISTRIBUTION:

Geographic data for Website is not reported at the media owner's option.

PUBLISHER'S AFFIDAVIT

We hereby make oath and say that all data set forth in this statement are true.

Ivar Bazzy, President

Carl Sheffres, Publisher

(At least one of the above signatures must be that of an officer of the publishing company or its authorized representative.)

IMPORTANT NOTE:

This unaudited brand report has been checked against the previous audit report. It will be included in the annual audit made by BPA Worldwide.

Date signed	July 23, 2020
State	Massachusetts
County	Norfolk
Received by BPA Worldwide	July 23, 2020
Type	BJ
ID Number	M069B0JO

About BPA Worldwide

A not-for-profit organization since 1931 and headquartered in Shelton, Connecticut, USA, BPA has a global membership, spanning more than 20 countries. The organization conducts 2,500+ audits for media brands in print, online/digital and live events. In addition, the BPA-iCompli division verifies compliance to defined industry standards, provides technology assurance, and certifies organization's sustainability practices and reporting. BPA is supported by 4,000+ advertiser and agency members. The latest innovation to move the industry forward is the BPA Media Exchange, a brand-safe and audited cooperative marketplace which offers automated solutions for the buying and selling of digital advertising.

FIELD SERVED

MICROWAVE JOURNAL serves the field of Communications/Cellular/Broadcast/Networks, Test & Measurement Equipment, Semiconductors & IC's, Components, Military/Radar/Weapons/EW, Software/EDA Tools, Materials/Substrates/Packaging, R & D Labs/Consultants/Educators, Industrial/Processing Equipment, Medical/Scientific Equipment, Consumer Electronics, Automotive/Telematics, Laser/Electro-Optical Systems/Equipment, Aerospace, Avionics, Government and All Others Allied to the Field.

DEFINITION OF RECIPIENT QUALIFICATION

Qualified recipients are personnel of design and development, engineering services/support, research and development and manufacturing and production. Also qualified are executive or operating management, purchasing and procurement, applications engineering, sales and marketing personnel, academia and other personnel.

AVERAGE NON-QUALIFIED CIRCULATION

Non-Qualified Not Included Elsewhere	Copies
Other Paid Circulation	89
Advertiser and Agency	735
Allocated for Trade Shows and Conventions	238
All Other	1,061
TOTAL	2,123

1. AVERAGE QUALIFIED CIRCULATION BREAKOUT FOR THE PERIOD

Qualified Circulation	Total Qualified		Qualified Non-Paid		Qualified Paid	
	Copies	Percent	Copies	Percent	Copies	Percent
Individual	50,000	100.0	50,000	100.0	-	-
Sponsored Individually Addressed	-	-	-	-	-	-
Membership Benefit	-	-	-	-	-	-
Multi-Copy Same Addressee	-	-	-	-	-	-
Single Copy Sales	-	-	-	-	-	-
TOTAL QUALIFIED CIRCULATION	50,000	100.0	50,000	100.0	-	-

2. QUALIFIED CIRCULATION BY ISSUES FOR PERIOD

2020 Issue	Print	Digital	Total Qualified
January	28,273	21,727	50,000
February	28,206	21,794	50,000
March	27,807	22,193	50,000
April	27,627	22,373	50,000
May	26,940	23,060	50,000
June	26,894	23,106	50,000

3a. BUSINESS/OCCUPATION BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF JUNE 2020
This issue is equal to the average of the other 5 issues reported in Paragraph 2.

Business and Industry	Total Qualified	Percent of Total	Print	Digital	Design & Development	Engineering Services/Support	Executive or Operating Management	Research & Development	Manufacturing & Production	Purchasing & Procurement	Applications Engineering, Sales & Marketing	Academia	Other	None of the Above
Communications/Cellular/Broadcast/Networks	12,943	25.9	6,778	6,165	4,061	2,311	3,575	1,286	246	123	805	419	117	-
Test & Measurement Equipment	4,347	8.7	2,259	2,088	1,297	879	755	520	161	39	533	108	55	-
Semiconductors & ICs	2,770	5.6	1,118	1,652	1,058	266	334	477	91	26	365	109	44	-
Components	2,271	4.5	1,267	1,004	573	297	609	191	123	45	350	52	31	-
Military/Radar/Weapons/EW	4,038	8.1	2,005	2,033	1,919	479	422	689	131	37	221	102	38	-
Software/EDA Tools	995	2.0	517	478	253	157	278	107	16	15	137	27	5	-
Materials/Substrates/Packaging	1,356	2.7	827	529	204	193	433	153	160	39	138	24	12	-
R & D Labs/Consultants/Educators	4,445	8.9	2,202	2,243	965	533	597	1,289	37	25	96	881	22	-
Industrial/Processing Equipment	4,655	9.3	3,052	1,603	1,163	996	1,470	229	392	84	285	25	11	-
Medical/Scientific Equipment	1,471	2.9	831	640	430	234	334	246	103	27	48	42	7	-
Consumer Electronics	2,216	4.4	1,250	966	691	324	676	214	93	40	142	31	5	-
Automotive/Telematics	1,802	3.6	1,076	726	566	319	440	226	118	28	80	17	8	-
Laser/Electro-Optical Systems, Equipment	413	0.8	228	185	105	41	99	73	26	11	39	16	3	-
Other	612	1.2	273	339	121	66	87	47	45	7	34	77	128	-
Aerospace	2,877	5.8	1,549	1,328	1,100	504	510	355	177	43	126	37	25	-
Avionics	550	1.1	302	248	216	119	117	32	16	6	26	15	3	-
Government	2,239	4.5	1,360	879	486	611	552	309	39	40	60	109	33	-
None of the Above	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL QUALIFIED CIRCULATION	50,000	100.0	26,894	23,106	15,208	8,329	11,288	6,443	1,974	635	3,485	2,091	547	-
PERCENT	100.0		53.8	46.2	30.4	16.6	22.6	12.9	3.9	1.3	7.0	4.2	1.1	-