

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.

Horizon House Publications Inc
685 Canton Street
Norwood, MA 02062
Tel. No.: (781) 769-9750
Fax No.: (781) 769-5037
www.mwjournal.com

Since 1958, **MICROWAVE JOURNAL** has been the 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



46,021 average
unique browsers

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
a. Print	36,945	-	36,945
b. Digital	13,055	-	13,055
1. Requested	13,055	-	13,055
2. Non-Requested	-	-	-
MICROWAVE JOURNAL WEBSITE (Monthly Unique Browsers with 111,503 average Page Impressions)	46,021	-	46,021

3b. QUALIFICATION SOURCE BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF NOVEMBER 2016

QUALIFICATION SOURCE	Qualified Within			Print	Digital	Total Qualified	Percent
	1 Year	2 Years	3 Years				
I. Direct Request:	42,479	7,458	-	36,726	13,211	49,937	99.9
II. Request from recipient's company:	22	41	-	59	4	63	0.1
III. Membership Benefit:	-	-	-	-	-	-	-
IV. Communication from recipient or recipient's company (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	42,501	7,499	-	36,785	13,215	50,000	100.0
PERCENT	85.0	15.0	-	73.6	26.4	100.0	

QUALIFICATION SOURCE BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF NOVEMBER 2016

State	Print	Digital	Total Qualified	Percent	State	Print	Digital	Total Qualified	Percent
Maine	96	16	112		Kentucky	283	37	320	
New Hampshire	356	76	432		Tennessee	451	58	509	
Vermont	78	18	96		Alabama	375	59	434	
Massachusetts	1,229	370	1,599		Mississippi	145	24	169	
Rhode Island	133	16	149		EAST SO. CENTRAL	1,254	178	1,432	2.9
Connecticut	467	73	540		Arkansas	130	27	157	
NEW ENGLAND	2,359	569	2,928	5.9	Louisiana	184	35	219	
New York	1,772	350	2,122		Oklahoma	251	53	304	
New Jersey	981	227	1,208		Texas	1,987	470	2,457	
Pennsylvania	1,463	242	1,705		WEST SO. CENTRAL	2,552	585	3,137	6.3
MIDDLE ATLANTIC	4,216	819	5,035	10.1	Montana	81	14	95	
Ohio	1,328	240	1,568		Idaho	139	26	165	
Indiana	690	108	798		Wyoming	41	11	52	
Illinois	1,426	267	1,693		Colorado	295	190	485	
Michigan	1,023	167	1,190		New Mexico	245	56	301	
Wisconsin	716	92	808		Arizona	647	243	890	
EAST NO. CENTRAL	5,183	874	6,057	12.1	Utah	289	57	346	
Minnesota	755	120	875		Nevada	142	38	180	
Iowa	349	74	423		MOUNTAIN	1,879	635	2,514	5.0
Missouri	488	93	581		Alaska	70	12	82	
North Dakota	84	10	94		Washington	587	154	741	
South Dakota	112	13	125		Oregon	400	145	545	
Nebraska	213	26	239		California	4,828	1,644	6,472	
Kansas	338	46	384		Hawaii	67	20	87	
WEST NO. CENTRAL	2,339	382	2,721	5.4	PACIFIC	5,952	1,975	7,927	15.9
Delaware	55	12	67		UNITED STATES	31,219	7,252	38,471	76.9
Maryland	880	242	1,122		U.S. Territories	28	11	39	
Washington, DC	182	46	228		Canada	179	297	476	
Virginia	841	201	1,042		Mexico	23	53	76	
West Virginia	127	12	139		Other International	5,333	5,601	10,934	
North Carolina	810	179	989		APO/FPO	3	1	4	
South Carolina	333	44	377						
Georgia	683	142	825		TOTAL QUALIFIED CIRCULATION	36,785	13,215	50,000	100.0
Florida	1,574	357	1,931						
SOUTH ATLANTIC	5,485	1,235	6,720	13.4					

*See Additional Data

GEOGRAPHICAL BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF NOVEMBER 2016

Region/Country	Print	Digital	Total Qualified	Percent	Region/Country	Print	Digital	Total Qualified	Percent	
ASIA					AFRICA					
Armenia	1	-	1		Algeria	5	9	14		
Bangladesh	-	3	3		Angola	-	1	1		
China	68	150	218		Botswana	-	2	2		
Georgia	1	-	1		Burkina Faso	-	1	1		
Hong Kong - SAR	8	30	38		Cameroon	-	2	2		
India	402	458	860		Egypt	9	21	30		
Indonesia	8	27	35		Ethiopia	1	2	3		
Japan	161	272	433		Ghana	2	2	4		
Korea, Democratic	1	-	1		Kenya	1	1	2		
Korea, Republic Of	102	190	292		Liberia	1	-	1		
Macao	1	2	3		Libyan Arab Jamahiriya	-	2	2		
Malaysia	49	74	123		Mauritania	-	1	1		
Myanmar	-	1	1		Morocco	-	1	1		
Pakistan	11	34	45		Mozambique	-	1	1		
Philippines	15	23	38		Namibia	1	-	1		
Singapore	63	100	163		Niger	1	9	10		
Sri Lanka	7	4	11		Senegal	-	1	1		
Taiwan	56	167	223		Somalia	1	-	1		
Thailand	10	23	33		South Africa	19	47	66		
Uzbekistan	-	1	1		Sudan	-	2	2		
Vietnam	5	22	27		Swaziland	-	1	1		
Subtotal	969	1,581	2,550	5.1	Tanzania	-	1	1		
MIDDLE EAST					Togo	-	1	1		
Iran	15	46	61		Tunisia	4	12	16		
Iraq	1	4	5		Uganda	-	1	1		
Israel	72	122	194		Zimbabwe	4	1	5		
Jordan	1	2	3		unspecified Africa	4	5	9		
Kuwait	-	2	2		Subtotal	53	127	180	0.4	
Lebanon	1	5	6		NORTH AMERICA					
Oman	-	2	2		Canada	179	297	476		
Qatar	-	2	2		Mexico	23	53	76		
Saudi Arabia	6	17	23		United States	31,219	7,252	38,471		
Syrian Arab Republic	-	5	5		unspecified North America	31	12	43		
United Arab Emirates	3	8	11		Subtotal	31,452	7,614	39,066	78.1	
Yemen	1	-	1		CARIBBEAN					
unspecified Middle East	1	1	2		Antigua and Barbuda	-	1	1		
Subtotal	101	216	317	0.6	Aruba	-	1	1		
EUROPE					Cuba	2	1	3		
Albania	-	3	3		Dominican Republic	-	1	1		
Austria	36	37	73		Jamaica	-	1	1		
Belarus	6	8	14		Netherlands Antilles	1	1	2		
Belgium	78	70	148		Trinidad and Tobago	-	2	2		
Bosnia and Herzegovina	2	2	4		Virgin Islands, British	-	1	1		
Bulgaria	16	19	35		Subtotal	3	9	12	-	
Croatia	7	7	14		CENTRAL AMERICA					
Cyprus	3	-	3		Belize	-	1	1		
Czech Republic	21	41	62		Costa Rica	1	3	4		
Denmark	42	61	103		Honduras	-	1	1		
Estonia	4	3	7		Panama	-	1	1		
Finland	37	71	108		Subtotal	1	6	7	-	
France	256	320	576		SOUTH AMERICA					
Germany	403	470	873		Argentina	36	44	80		
Greece	31	48	79		Bolivia	1	4	5		
Greenland	-	1	1		Brazil	63	72	135		
Hungary	23	29	52		Chile	4	10	14		
Ireland	95	60	155		Colombia	2	20	22		
Italy	234	270	504		Ecuador	3	3	6		
Latvia	2	9	11		Peru	4	15	19		
Lithuania	4	9	13		Uruguay	-	2	2		
Luxembourg	2	11	13		Venezuela	5	4	9		
Macedonia	-	2	2		Subtotal	118	174	292	0.6	
Malta	-	2	2		ASIA PACIFIC					
Moldova	-	1	1		Australia	63	120	183		
Netherlands	105	108	213		Fiji	-	1	1		
Norway	22	29	51		French Polynesia	-	1	1		
Poland	30	48	78		New Caledonia	-	1	1		
Portugal	18	27	45		New Zealand	10	23	33		
Romania	16	32	48		Subtotal	73	146	219	0.5	
Russian Federation	84	230	314							
Serbia	16	17	33							
Slovakia	7	6	13							
Slovenia	14	14	28							
Spain	130	141	271							
Sweden	110	120	230							
Switzerland	63	60	123							
Turkey	135	103	238							
Ukraine	25	49	74							
United Kingdom	1,938	804	2,742							
Subtotal	4,015	3,342	7,357	14.7						
						TOTAL QUALIFIED CIRCULATION	36,785	13,215	50,000	100.0

*See Additional Data

WEBSITE CHANNEL

WWW.MWJOURNAL.COM

2016	PAGE IMPRESSIONS	USER SESSIONS	UNIQUE BROWSERS	UNIQUE BROWSER FREQUENCY	PAGE DURATION	USER SESSION DURATION
July	111,984	65,228	47,137	1.38	02:14	01:36
August	113,523	63,827	45,887	1.39	01:56	01:30
September	114,284	62,966	45,934	1.37	01:53	01:32
October	115,054	64,943	47,073	1.38	01:58	01:31
November	112,377	65,807	47,914	1.37	02:08	01:31
December	101,796	57,176	42,186	1.36	01:50	01:26
AVERAGE:	111,503	63,324	46,021	1.38	01:59	01:31

July - December 2016 data was provided by Google Analytics. All website activity is audited by BPA Worldwide.

WEBSITE GLOSSARY

Page Impressions: A Page Impression 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.

User Sessions: A single continuous set of activity attributable to a cookie'd 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.

Unique Browsers: An identified and unduplicated Cookie'd Browser that accesses Internet content or advertising during a measurement period.

Unique Browser Frequency: Unique Browser Frequency represents the average number of times a Unique Browser visits a site during a reporting period. This is calculated by dividing the total number of User Sessions by the number of Unique Browsers.

Page Duration: The average time spent viewing any page on a web site.

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

For info on how to obtain online ad campaign performance metrics across multiple sites, visit www.adicompli.com

ADDITIONAL DATA

METHOD OF DISTRIBUTION:

All qualified circulation conforms to the field served and definition of a recipient's 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	January 26, 2017
State	Massachusetts
County	Norfolk
Received by BPA Worldwide	January 26, 2017
Type	BJ
ID Number	M069B0D6

About BPA Worldwide:

A not-for-profit organization since 1931, BPA Worldwide is governed by a tripartite board comprised of media owners, advertising agencies and advertisers. Headquartered in Shelton, Connecticut, USA, BPA has the largest membership of any media-auditing organization in the world, spanning more than 30 countries. Globally, BPA audits media properties including consumer magazines, newspapers, web sites, events, email newsletters, databases, wireless, social media and other advertiser-supported media—as well as advertiser and agency members. Visit www.bpaww.com for the latest audit reports, membership information and publishing and advertising industry news.

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 and company addressed copies.

AVERAGE NON-QUALIFIED CIRCULATION

NON-QUALIFIED Not Included Elsewhere	Copies
Other Paid Circulation	154
Advertiser and Agency	967
Allocated for Trade Shows and Conventions	1,208
All Other	1,630
TOTAL	3,958

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

2016 Issue	Print	Digital	Total Qualified
July	37,035	12,965	50,000
August	36,946	13,054	50,000
September	37,094	12,906	50,000
October	36,981	13,019	50,000
November	36,785	13,215	50,000
December	36,828	13,172	50,000

3a. BUSINESS/OCCUPATION BREAKOUT OF QUALIFIED CIRCULATION FOR ISSUE OF NOVEMBER 2016
 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	10,754	21.5	7,448	3,306	3,633	2,661	2,302	994	182	105	506	316	43	12
TEST & MEASUREMENT EQUIPMENT	4,789	9.6	3,442	1,347	1,452	1,165	868	546	172	43	443	88	12	-
SEMICONDUCTORS & ICs	2,763	5.5	1,649	1,114	1,044	369	422	406	87	25	295	105	9	1
COMPONENTS	2,843	5.7	2,184	659	780	566	722	200	152	50	307	54	8	4
MILITARY/RADAR/WEAPONS/EW	4,230	8.5	2,757	1,473	1,969	671	415	694	136	51	181	96	14	3
SOFTWARE/EDA TOOLS	1,000	2.0	743	257	242	222	260	107	19	10	100	37	2	1
MATERIALS/SUBSTRATES/PACKAGING	1,454	2.9	1,209	245	246	332	381	158	163	28	114	25	4	3
R & D LABS/CONSULTANTS/EDUCATORS	4,779	9.5	3,292	1,487	939	792	800	1,199	38	25	98	863	22	3
INDUSTRIAL/PROCESSING EQUIPMENT	5,872	11.7	4,995	877	1,182	1,442	2,050	241	415	86	420	17	11	8
MEDICAL/SCIENTIFIC EQUIPMENT	1,629	3.3	1,309	320	476	359	327	224	129	23	36	35	17	3
CONSUMER ELECTRONICS	1,795	3.6	1,377	418	583	352	453	154	79	31	112	21	8	2
AUTOMOTIVE/TELEMATICS	1,986	4.0	1,633	353	544	496	515	151	153	34	78	8	5	2
LASER/ELECTRO-OPTICAL SYSTEMS, EQUIPMENT	343	0.7	258	85	83	71	71	63	14	5	21	13	2	-
OTHER	201	0.4	172	29	45	52	51	10	12	5	14	2	10	-
AEROSPACE	2,434	4.8	1,826	608	833	576	417	279	166	39	80	32	10	2
AVIONICS	690	1.4	543	147	237	170	159	49	28	9	21	10	7	-
GOVERNMENT	2,387	4.8	1,904	483	421	848	566	277	65	67	52	59	28	4
NONE OF THE ABOVE	51	0.1	44	7	15	6	6	7	4	-	1	5	1	6
TOTAL QUALIFIED CIRCULATION	50,000	100.0	36,785	13,215	14,724	11,150	10,785	5,759	2,014	636	2,879	1,786	213	54
PERCENT	100.0	100.0	73.6	26.4	29.4	22.3	21.6	11.5	4.0	1.3	5.8	3.6	0.4	0.1