

FCC RF EXPOSURE REPORT

FCC ID: M82-EKI1362BE

Project No. : 1711188A
Equipment : Ethernet Device
Test Model : EKI-1361-BE
Series Model : EKI-1362-BE, EKI-1361-MB-BE,
 EKI-1362-MB-BE, EKI-6333AC-A,
 EKI-1361XXXXXXXXXXXXXXXXXX,
 EKI-1362XXXXXXXXXXXXXXXXXX,
 EKI1361XXXXXXXXXXXXXXXXXX,
 EKI1362XXXXXXXXXXXXXXXXXX,
 EKI-6333ACXXXXXXXXXXXXXXXXXX,
 EKI6333ACXXXXXXXXXXXXXXXXXX
 (where“X”may be any alphanumeric
 character, blank or“-”.)
Applicant : Advantech Co., Ltd.
Address : No.1, Alley 20, Lane 26, Rueiguang Road,
 Neihu District, Taipei 11491, Taiwan, R.O.C.
According: : FCC Guidelines for Human Exposure IEEE
 C95.1

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B T L I N C .

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi r^2} = \frac{EIRP}{4\pi r^2}$$

where:

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Table for Filed Antenna

2.4G WLAN:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Invax	AN2450-92K01BRS	Dipole	R-SMA	5.03
2	Invax	AN2450-92K01BRS	Dipole	R-SMA	5.03

5G RLAN:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Invax	AN2450-92K01BRS	Dipole	R-SMA	5.01
2	Invax	AN2450-92K01BRS	Dipole	R-SMA	5.01

Operating Mode / TX Mode	2TX
802.11a	V (ANT 1+ANT 2)
802.11b	V (ANT 1+ANT 2)
802.11g	V (ANT 1+ANT 2)
802.11n (20MHz)	V (ANT 1+ANT 2)
802.11n (40MHz)	V (ANT 1+ANT 2)
802.11ac (20MHz)	V (ANT 1+ANT 2)
802.11ac (40MHz)	V (ANT 1+ANT 2)
802.11ac (80 MHz)	V (ANT 1+ANT 2)

TEST RESULTS

2.4G:

Test Mode : TX B Mode Total / CH01, CH06, CH11

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2412	5.03	3.1842	17.41	55.0808	0.03491004	1	Complies
2437	5.03	3.1842	17.62	57.8096	0.03663957	1	Complies
2462	5.03	3.1842	18.11	64.7143	0.04101572	1	Complies

Test Mode : TX G Mode Total / CH01, CH06, CH11

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2412	5.03	3.1842	21.71	148.2518	0.09396159	1	Complies
2437	5.03	3.1842	21.56	143.2188	0.09077168	1	Complies
2462	5.03	3.1842	22.51	178.2379	0.11296668	1	Complies

Test Mode : TX N-40M Mode / CH03, CH06, CH09

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2422	5.03	3.1842	20.97	125.0259	0.07924108	1	Complies
2437	5.03	3.1842	21.46	139.9587	0.08870546	1	Complies
2452	5.03	3.1842	21.82	152.0548	0.09637189	1	Complies

Test Mode : TX N-20M Mode Total / CH01, CH06, CH11

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2412	5.03	3.1842	21.01	126.1828	0.07997429	1	Complies
2437	5.03	3.1842	21.56	143.2188	0.09077168	1	Complies
2462	5.03	3.1842	20.57	114.0250	0.07226872	1	Complies

5G:

Test Mode : UNII-1/TX A Mode Total /CH36, CH40, CH48

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5180	5.01	3.1696	14.40	27.5423	0.01737602	1	Complies
5200	5.01	3.1696	14.42	27.6694	0.01745623	1	Complies
5240	5.01	3.1696	14.83	30.4089	0.01918449	1	Complies

Test Mode : UNII-1/TX N20 Mode Total /CH36, CH40, CH48

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5180	5.01	3.1696	14.22	26.4241	0.01667057	1	Complies
5200	5.01	3.1696	14.26	26.6686	0.01682482	1	Complies
5240	5.01	3.1696	14.54	28.4446	0.01794529	1	Complies

Test Mode : UNII-1/TX N40 Mode / CH38, CH46

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5190	5.01	3.1696	14.26	26.6686	0.01682482	1	Complies
5230	5.01	3.1696	14.56	28.5759	0.01802812	1	Complies

Test Mode : UNII-1/TX AC20 Mode Total /CH36, CH40, CH48

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5180	5.01	3.1696	14.19	26.2422	0.01655581	1	Complies
5200	5.01	3.1696	14.24	26.5461	0.01674751	1	Complies
5240	5.01	3.1696	14.52	28.3139	0.01786283	1	Complies

Test Mode : UNII-1/TX AC40 Mode / CH38, CH46

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5190	5.01	3.1696	14.23	26.4850	0.01670900	1	Complies
5230	5.01	3.1696	14.53	28.3792	0.01790401	1	Complies

Test Mode : UNII-1/TX AC80 Mode Total / CH42

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5210	5.01	3.1696	14.45	27.8612	0.01757723	1	Complies

Test Mode : UNII-2A/TX A Mode Total / CH52, CH60, CH64

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5260	5.01	3.1696	16.42	43.8531	0.02766625	1	Complies
5300	5.01	3.1696	15.97	39.5367	0.02494310	1	Complies
5320	5.01	3.1696	16.16	41.3048	0.02605856	1	Complies

Test Mode : UNII-2A/TX N20 Mode Total / CH52, CH60, CH64

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5260	5.01	3.1696	16.15	41.2098	0.02599862	1	Complies
5300	5.01	3.1696	15.99	39.7192	0.02505823	1	Complies
5320	5.01	3.1696	16.18	41.4954	0.02617884	1	Complies

Test Mode : UNII-1/TX N40 Mode / CH54, CH62

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5270	5.01	3.1696	17.51	56.3638	0.03555907	1	Complies
5310	5.01	3.1696	16.62	45.9198	0.02897013	1	Complies

Test Mode : UNII-2A/TX AC20 Mode Total / CH52, CH60, CH64

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5260	5.01	3.1696	16.10	40.7380	0.02570102	1	Complies
5300	5.01	3.1696	15.97	39.5367	0.02494310	1	Complies
5320	5.01	3.1696	16.15	41.2098	0.02599862	1	Complies

Test Mode : UNII-1/TX AC40 Mode / CH54, CH62

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5270	5.01	3.1696	17.48	55.9758	0.03531428	1	Complies
5310	5.01	3.1696	16.42	43.8531	0.02766625	1	Complies

Test Mode : UNII-2A/TX AC80 Mode Total / CH58

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5290	5.01	3.1696	13.81	24.0436	0.01516877	1	Complies

Test Mode : UNII-2C/TX A Mode Total / CH100, CH120, CH140

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5500	5.01	3.1696	15.66	36.8129	0.02322471	1	Complies
5600	5.01	3.1696	16.02	39.9945	0.02523192	1	Complies
5700	5.01	3.1696	15.48	35.3183	0.02228181	1	Complies

Test Mode : UNII-2C/TX N20 Mode Total / CH100, CH120, CH140

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5500	5.01	3.1696	15.67	36.8978	0.02327825	1	Complies
5600	5.01	3.1696	16.00	39.8107	0.02511599	1	Complies
5700	5.01	3.1696	15.38	34.5144	0.02177461	1	Complies

Test Mode : UNII-2C/TX N40 Mode Total / CH102, CH110, CH134

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5510	5.01	3.1696	17.06	50.8159	0.03205903	1	Complies
5550	5.01	3.1696	17.07	50.9331	0.03213293	1	Complies
5670	5.01	3.1696	16.61	45.8142	0.02890350	1	Complies

Test Mode : UNII-2C/TX AC20 Mode Total / CH100, CH120, CH140

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5500	5.01	3.1696	15.61	36.3915	0.02295886	1	Complies
5600	5.01	3.1696	15.78	37.8443	0.02387538	1	Complies
5700	5.01	3.1696	15.37	34.4350	0.02172453	1	Complies

Test Mode : UNII-2C/TX AC40 Mode Total / CH102, CH110, CH134

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5510	5.01	3.1696	17.03	50.4661	0.03183834	1	Complies
5550	5.01	3.1696	17.02	50.3501	0.03176511	1	Complies
5670	5.01	3.1696	16.59	45.6037	0.02877070	1	Complies

Test Mode : UNII-2C/TX AC80 Mode Total / CH106, CH122

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5530	5.01	3.1696	15.28	33.7287	0.02127896	1	Complies
5610	5.01	3.1696	17.09	51.1682	0.03228125	1	Complies

Test Mode : UNII-3/TX A Mode Total / CH149, CH157, CH161

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5745	5.01	3.1696	16.85	48.4172	0.03054572	1	Complies
5785	5.01	3.1696	18.30	67.6083	0.04265308	1	Complies
5805	5.01	3.1696	18.22	66.3743	0.04187457	1	Complies

Test Mode : UNII-3/TX N20 Mode Total / CH149, CH157, CH161

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5745	5.01	3.1696	16.24	42.0727	0.02654302	1	Complies
5785	5.01	3.1696	17.77	59.8412	0.03775290	1	Complies
5805	5.01	3.1696	18.03	63.5331	0.04008209	1	Complies

Test Mode : UNII-3/TX N40 Mode / CH151, CH159

Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5755	5.01	3.1696	14.23	26.4850	0.01670900	1	Complies
5795	5.01	3.1696	18.00	63.0957	0.03980617	1	Complies

Test Mode :	UNII-3/TX AC20 Mode Total / CH149, CH157, CH161
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Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5745	5.01	3.1696	16.23	41.9759	0.02648197	1	Complies
5785	5.01	3.1696	17.72	59.1562	0.03732075	1	Complies
5805	5.01	3.1696	18.01	63.2412	0.03989793	1	Complies

Test Mode :	UNII-3/TX AC40 Mode / CH151, CH159
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Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5755	5.01	3.1696	14.19	26.2422	0.01655581	1	Complies
5795	5.01	3.1696	17.92	61.9441	0.03907962	1	Complies

Test Mode :	UNII-3/TX AC80 Mode Total / CH155
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Frequency (MHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	AVG. Output Power (dBm)	AVG. Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
5775	5.01	3.1696	13.75	23.7137	0.01496065	1	Complies

Note:

(1) The calculated distance is 20 cm.