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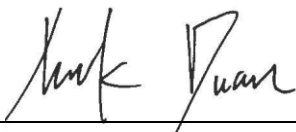


MPE Report

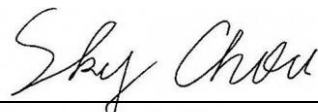
Test Report No.	: 1711FS11
Applicant	: Edimax Technology Co., Ltd.
Product Type	: AC1300 Outdoor AP
Trade Name	: EDIMAX
Model Number	: EW-7429HOB, OAP1300, GAP-429HOB
Date of Received	: Jun. 23, 2017
Test Period	: Jun. 29, 2017
Date of Issued	: Nov. 15, 2017
Test Specification	: ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013 47 CFR § 2.1091 47 CFR § 1.1310
Location of Test Lab.	: Chang-an Lab.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
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Approved By :


(Mark Duan)

Tested By :


(Sky Chou)



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1. Description of Equipment under Test (EUT)

Applicant	Edimax Technology Co., Ltd. No.278, Xinhu 1st Rd., Neihu Dist., Taipei City, Taiwan				
Manufacturer	Edimax Technology Co., Ltd. No.278, Xinhu 1st Rd., Neihu Dist., Taipei City, Taiwan				
Product Type	AC1300 Outdoor AP				
Trade Name	EDIMAX				
Model Number	EW-7429HOB, OAP1300, GAP-429HOB				
Models different description	Those model numbers differ from each other in selling region.				
FCC ID	NDD9574291705				
Frequency Range	Operate Band			Frequency Range (MHz)	
	IEEE 802.11b / 802.11g IEEE 802.11n 2.4GHz 20MHz(256QAM)			2412 - 2462	
	IEEE 802.11n 2.4GHz 40 MHz(256QAM)			2422 - 2452	
	IEEE 802.11a U-NII Band I			5180 - 5240	
	IEEE 802.11a U-NII Band III			5745 - 5825	
	IEEE 802.11ac / 802.11n 5GHz 20MHz U-NII Band I			5180 - 5240	
	IEEE 802.11ac / 802.11n 5GHz 20MHz U-NII Band III			5745 - 5825	
	IEEE 802.11ac / 802.11n 5GHz 40MHz U-NII Band I			5190 - 5230	
	IEEE 802.11ac / 802.11n 5GHz 40MHz U-NII Band III			5755 - 5795	
	IEEE 802.11ac 80MHz U-NII Band I			5210	
	IEEE 802.11ac 80MHz U-NII Band III			5775	
	Antenna information	ANT	Model	Type	Max. Gain (dBi)
ANT-0 / ANT-1		98623PRSX000	Dipole Antenna (Reversed-SMA Connector)	2.4GHz	4.58
				5GHz U-NII Band I	6.18
				5GHz U-NII Band III	6.05
Derictional Gain			5GHz U-NII Band I	9.19	
			5GHz U-NII Band III	9.06	
ANT-0 / ANT-1		C095-510399-A	Dipole Antenna (Reversed-SMA Connector)	2.4GHz	3
				5GHz U-NII Band I	4
				5GHz U-NII Band III	4
Antenna Delivery	2TX (CDD/Beamforming on)				
RF Evaluation	0.257 mW/cm ²				
Temperature Range	-40 ~ +60°C				

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties



2. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as "a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. " This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: "IMPORTANT: To meet the FCC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna". Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a "mobile device" as defined in section § 2.1091 paragraph (b).

Exposure evaluation

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

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.

3. RF Output Power

The conducted power turn-up tolerance reference manufacturer specification.

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11b	1	2412.0	15.30	14.27	17.83
		2437.0	15.35	14.12	17.79
		2462.0	15.93	14.54	18.30
	2	2437.0	15.30	14.10	17.75
	5.5	2437.0	15.25	14.08	17.71
	11	2437.0	15.23	14.05	17.69
IEEE 802.11g	6	2412.0	11.01	13.01	15.13
		2437.0	16.12	18.40	20.42
		2462.0	9.88	12.20	14.20
	9	2437.0	16.10	18.35	20.38
	12	2437.0	16.08	18.33	20.36
	18	2437.0	16.03	18.30	20.32
	24	2437.0	16.00	18.22	20.26
	36	2437.0	15.98	18.28	20.29
	48	2437.0	15.95	18.18	20.22
	54	2437.0	15.94	18.12	20.18
IEEE 802.11n 2.4GHz 20MHz	13	2412.0	10.94	13.31	15.30
		2437.0	15.20	17.63	19.59
		2462.0	9.85	12.11	14.14
	28.8	2437.0	15.18	17.58	19.55
	43.4	2437.0	15.12	17.53	19.50
	57.8	2437.0	15.10	17.50	19.47
	86.6	2437.0	15.04	17.45	19.42
	115.6	2437.0	15.08	17.47	19.45
	130	2437.0	15.01	17.43	19.40
	144.4	2437.0	14.99	17.38	19.36
IEEE 802.11n 2.4GHz 40MHz	27	2422.0	7.65	9.61	11.75
		2437.0	9.45	11.54	13.63
		2452.0	10.28	12.22	14.37
	60	2437.0	9.42	11.50	13.59
	90	2437.0	9.39	11.48	13.57
	120	2437.0	9.32	11.43	13.51
	180	2437.0	9.30	11.39	13.48
	240	2437.0	9.25	11.45	13.50
	270	2437.0	9.21	11.40	13.45
	300	2437.0	9.20	11.38	13.44
	360	2437.0	9.12	11.32	13.37
	400	2437.0	9.15	11.33	13.39

Note: The relevant measured result has the offset with cable loss already.

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11a	6	5180.0	12.91	9.66	14.59
		5200.0	13.07	9.80	14.75
		5220.0	12.86	9.58	14.53
		5240.0	13.07	9.76	14.73
		5745.0	16.73	15.10	19.00
		5765.0	16.91	15.36	19.21
		5785.0	16.40	14.70	18.64
		5805.0	16.59	15.05	18.90
		5825.0	16.50	15.34	18.97
	54	5180.0	12.66	9.45	14.36
		5200.0	12.85	9.52	14.51
		5220.0	12.60	9.40	14.30
		5240.0	12.80	9.52	14.47
		5745.0	16.50	14.91	18.79
		5765.0	16.67	15.12	18.97
		5785.0	16.12	14.45	18.38
		5805.0	16.28	14.74	18.59
		5825.0	16.32	15.10	18.76
IEEE 802.11ac 20MHz	13	5180.0	12.92	9.85	14.66
		5200.0	12.72	9.51	14.42
		5220.0	12.86	9.76	14.59
		5240.0	13.03	9.88	14.74
		5745.0	17.01	15.50	19.33
		5765.0	17.26	15.83	19.61
		5785.0	17.53	16.26	19.95
		5805.0	17.78	16.65	20.26
		5825.0	17.20	16.41	19.83
	173.4	5180.0	12.67	9.52	14.38
		5200.0	12.48	9.26	14.17
		5220.0	12.58	9.52	14.32
		5240.0	12.71	9.62	14.44
		5745.0	16.79	15.28	19.11
		5765.0	17.01	15.53	19.34
		5785.0	17.24	15.95	19.65
		5805.0	17.54	16.41	20.02
		5825.0	16.99	16.21	19.63

Note: The relevant measured result has the offset with cable loss already.

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11ac 40MHz	27	5190.0	12.40	9.12	14.07
		5230.0	12.93	9.56	14.57
		5755.0	18.27	16.29	20.40
		5795.0	18.85	19.40	22.14
	400	5190.0	12.15	8.85	13.82
		5230.0	12.62	9.32	14.29
		5755.0	17.98	16.02	20.12
		5795.0	18.52	19.14	21.85
IEEE 802.11ac 80MHz	58.6	5210.0	9.15	6.33	10.98
		5775.0	15.20	13.27	17.35
	866.6	5210.0	8.82	6.12	10.69
		5775.0	14.91	12.95	17.05

Note: The relevant measured result has the offset with cable loss already.

Beamforming on

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11ac 20MHz	13	5180.0	9.64	6.89	11.49
		5200.0	10.01	7.03	11.78
		5220.0	9.78	6.82	11.56
		5240.0	9.98	6.89	11.71
		5745.0	15.85	13.90	17.99
		5765.0	16.11	14.28	18.30
		5785.0	16.41	14.64	18.62
		5805.0	16.64	15.01	18.91
		5825.0	15.66	14.36	18.07
	173.4	5180.0	9.37	6.64	11.23
		5200.0	9.71	6.81	11.51
		5220.0	9.52	6.57	11.30
		5240.0	9.73	6.62	11.46
		5745.0	15.53	13.68	17.71
		5765.0	15.78	13.96	17.97
		5785.0	16.17	14.40	18.38
		5805.0	16.43	14.74	18.68
		5825.0	15.47	14.13	17.86
IEEE 802.11ac 40MHz	27	5190.0	9.72	6.60	11.44
		5230.0	9.77	6.53	11.46
		5755.0	16.74	14.67	18.84
		5795.0	18.29	16.97	20.69
	400	5190.0	9.52	6.31	11.22
		5230.0	9.50	6.29	11.20
		5755.0	16.50	14.36	18.57
		5795.0	17.98	16.68	20.39
IEEE 802.11ac 80MHz	58.6	5210.0	7.69	4.78	9.48
		5775.0	13.76	11.72	15.87
	866.6	5210.0	7.45	4.55	9.25
		5775.0	13.50	11.48	15.62

Note:1. The relevant measured result has the offset with cable loss already.

2. Evaluated high and low data rate, the report record worst case low data rate measurement results.



4. Test Results

Band	Data Rate (Mbps)	Frequency (MHz)	Limit (mw)	Distance [R] (cm)	Max tune-up Power (upper limit) [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	[P] x [G] with Duty cycle [TP] (mW)	Power Density [S] (mw/cm ²)
IEEE 802.11b CDD	1	2412.0	1	20	18.40	4.58	2.87	1	198.56	0.040
		2437.0	1	20	18.40	4.58	2.87	1	198.56	0.040
		2462.0	1	20	18.40	4.58	2.87	1	198.56	0.040
IEEE 802.11g CDD	6	2412.0	1	20	15.20	4.58	2.87	1	95.03	0.019
		2437.0	1	20	20.50	4.58	2.87	1	322.02	0.064
		2462.0	1	20	14.30	4.58	2.87	1	77.25	0.015
IEEE 802.11n 2.4GHz 20MHz CDD	13	2412.0	1	20	15.40	4.58	2.87	1	99.51	0.020
		2437.0	1	20	19.70	4.58	2.87	1	267.84	0.053
		2462.0	1	20	14.30	4.58	2.87	1	77.25	0.015
IEEE 802.11n 2.4GHz 40MHz CDD	27	2422.0	1	20	11.90	4.58	2.87	1	44.45	0.009
		2437.0	1	20	13.70	4.58	2.87	1	67.28	0.013
		2452.0	1	20	14.50	4.58	2.87	1	80.89	0.016

Band	Data Rate (Mbps)	Frequency (MHz)	Limit (mw)	Distance [R] (cm)	Max tune-up Power (upper limit) [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	[P] x [G] with Duty cycle [TP] (mW)	Power Density [S] (mw/cm ²)
IEEE 802.11a CDD	6	5180.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5200.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5220.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5240.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5745.0	1	20	19.3	6.05	4.03	1	343.01	0.068
		5765.0	1	20	19.3	6.05	4.03	1	343.01	0.068
		5785.0	1	20	19.3	6.05	4.03	1	343.01	0.068
		5805.0	1	20	19.3	6.05	4.03	1	343.01	0.068
		5825.0	1	20	19.3	6.05	4.03	1	343.01	0.068
IEEE 802.11ac 20MHz CDD	13	5180.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5200.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5220.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5240.0	1	20	14.9	6.18	4.15	1	128.25	0.026
		5745.0	1	20	20.4	6.05	4.03	1	441.88	0.088
		5765.0	1	20	20.4	6.05	4.03	1	441.88	0.088
		5785.0	1	20	20.4	6.05	4.03	1	441.88	0.088
		5805.0	1	20	20.4	6.05	4.03	1	441.88	0.088
		5825.0	1	20	20.4	6.05	4.03	1	441.88	0.088
IEEE 802.11ac 40MHz CDD	27	5190.0	1	20	14.7	6.18	4.15	1	122.48	0.024
		5230.0	1	20	14.7	6.18	4.15	1	122.48	0.024
		5755.0	1	20	22.3	6.05	4.03	1	684.39	0.136
		5795.0	1	20	22.3	6.05	4.03	1	684.39	0.136
IEEE 802.11ac 80MHz CDD	58.6	5210.0	1	20	11.1	6.18	4.15	1	53.46	0.011
		5775.0	1	20	17.5	6.05	4.03	1	226.62	0.045

Band	Data Rate (Mbps)	Frequency (MHz)	Limit (mw/cm ²)	Distance [R] (cm)	Max tune-up Power (upper limit) [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	[P] x [G] with Duty cycle [TP] (mW)	Power Density [S] (mw/cm ²)
IEEE 802.11ac 20MHz CDD/BF ON	13	5180.0	1	20	11.9	9.19	8.3	1	128.55	0.026
		5200.0	1	20	11.9	9.19	8.3	1	128.55	0.026
		5220.0	1	20	11.9	9.19	8.3	1	128.55	0.026
		5240.0	1	20	11.9	9.19	8.3	1	128.55	0.026
		5745.0	1	20	19	9.06	8.05	1	639.43	0.127
		5765.0	1	20	19	9.06	8.05	1	639.43	0.127
		5785.0	1	20	19	9.06	8.05	1	639.43	0.127
		5805.0	1	20	19	9.06	8.05	1	639.43	0.127
		5825.0	1	20	19	9.06	8.05	1	639.43	0.127
IEEE 802.11ac 40MHz CDD/BF ON	27	5190.0	1	20	11.6	9.19	8.3	1	119.97	0.024
		5230.0	1	20	11.6	9.19	8.3	1	119.97	0.024
		5755.0	1	20	20.8	9.06	8.05	1	967.82	0.193
		5795.0	1	20	20.8	9.06	8.05	1	967.82	0.193
IEEE 802.11ac 80MHz CDD/BF ON	58.6	5210.0	1	20	9.6	9.19	8.3	1	75.7	0.015
		5775.0	1	20	16	9.06	8.05	1	320.48	0.064

Note:

1. Mobile or fixed location transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.
2. The Numeric Gain calculated by $10^{(\text{ant. Gain(dBi)} / 10)}$.
3. Each band max power which perform MPE of any configurations.
4. The MPE results are evaluated by lowest data rate for WLAN.
5. The device operating IEEE 802.11 a/b/g/n/ac mode is 2TX CDD.
6. We used the maximum antenna gain to provide MPE results

Simultaneous Transmitting:

$$\text{Total MPE} = 2.4\text{GHz MPE} + 5\text{G MPE} = 0.064 + 0.193 = 0.257 \text{ mw/cm}^2 < 10 \text{ mw/cm}^2$$