



A Test Lab Techno Corp.

Changan Lab : No. 140-1, Changan Street, Bade District, Taoyuan City 33465, Taiwan (R.O.C)
Tel : 886-3-271-0188 / Fax : 886-3-271-0190

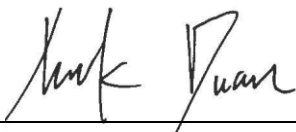


MPE Report

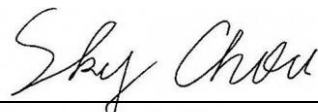
Test Report No.	: 1711FS12
Applicant	: Edimax Technology Co., Ltd.
Product Type	: AC1300 Outdoor AP
Trade Name	: EDIMAX
Model Number	: EW-7429HOB, OAP1300, GAP-429HOB
Date of Received	: Jun. 23, 2017
Test Period	: Jul. 15, 2017
Date of Issued	: Nov. 15, 2017
Test Specification	: ANSI / IEEE Std.C95.1-1992 / 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.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp.
4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

Approved By :


(Mark Duan)

Tested By :


(Sky Chou)



Contents

1.	Description of Equipment under Test (EUT).....	3
2.	Human Exposure Assessment.....	4
3.	RF Output Power	5
4.	Test Results	10

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				
Class II Permissive Change	Add U-NII Band II function by software control.				
Frequency Range	Operate Band			Frequency Range (MHz)	
	IEEE 802.11a U-NII Band II-A			5260 - 5320	
	IEEE 802.11a U-NII Band II-C			5500 - 5720	
	IEEE 802.11ac / 802.11n 5GHz 20MHz U-NII Band II-A			5260 - 5320	
	IEEE 802.11ac / 802.11n 5GHz 20MHz U-NII Band II-C			5500 - 5720	
	IEEE 802.11ac / 802.11n 5GHz 40MHz U-NII Band II-A			5270 - 5310	
	IEEE 802.11ac / 802.11n 5GHz 40MHz U-NII Band II-C			5510 - 5710	
	IEEE 802.11ac 80MHz U-NII Band II-A			5290	
	IEEE 802.11ac 80MHz U-NII Band II-C			5530 - 5690	
Antenna information	ANT	Model	Type	Max. Gain (dBi)	
	ANT-0 / ANT-1	98623PRSX000	Dipole Antenna (Reversed-SMA Connector)	U-NII Band II-A	6.22
				U-NII Band II-C	6.12
	Derictional Gain			U-NII Band II-A	9.23
				U-NII Band II-C	9.13
	ANT-0 / ANT-1	C095-510399-A	Dipole Antenna (Reversed-SMA Connector)	U-NII Band II-A	4
				U-NII Band II-C	4
Antenna Delivery	2TX (CDD/Beamforming on)				
RF Evaluation	0.257 mW/cm ²				
Temperature Range	-40 ~ +60℃				

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 802.11a	6	5260.0	17.91	14.83	19.65
		5280.0	18.17	15.23	19.95
		5300.0	18.24	15.19	19.99
		5320.0	17.47	14.09	19.11
		5500.0	16.36	13.70	18.24
		5520.0	16.79	14.07	18.65
		5540.0	17.01	14.44	18.92
		5560.0	15.91	13.21	17.78
		5580.0	16.53	13.78	18.38
		5600.0	16.82	14.17	18.70
		5620.0	16.93	14.32	18.83
		5640.0	17.01	14.72	19.02
		5660.0	17.10	15.01	19.19
		5680.0	16.99	15.20	19.20
		5700.0	15.17	13.41	17.39
		5720.0	17.54	16.20	19.93
	54	5260.0	17.67	14.59	19.41
		5280.0	17.92	15.01	19.71
		5300.0	17.92	14.94	19.69
		5320.0	17.27	13.88	18.91
		5500.0	16.05	13.47	17.96
		5520.0	16.53	13.84	18.40
		5540.0	16.72	14.19	18.65
		5560.0	15.77	13.00	17.61
		5580.0	16.29	13.53	18.14
		5600.0	16.60	13.85	18.45
		5620.0	16.71	14.04	18.59
		5640.0	16.78	14.50	18.80
		5660.0	16.92	14.67	18.95
		5680.0	16.79	15.02	19.00
		5700.0	14.91	13.17	17.14
		5720.0	17.39	15.88	19.71

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 20MHz	13	5260.0	17.95	15.00	19.73
		5280.0	18.24	15.43	20.07
		5300.0	18.26	15.24	20.02
		5320.0	17.89	14.76	19.61
		5500.0	16.91	14.12	18.75
		5520.0	17.23	14.55	19.10
		5540.0	17.50	14.84	19.38
		5560.0	17.75	15.15	19.65
		5580.0	18.20	15.52	20.07
		5600.0	18.41	16.09	20.41
		5620.0	18.47	16.26	20.51
		5640.0	18.42	16.56	20.60
		5660.0	18.51	16.80	20.75
		5680.0	18.42	17.10	20.82
		5700.0	14.62	12.78	16.81
		5720.0	17.56	16.13	19.91
	173.4	5260.0	17.69	14.67	19.45
		5280.0	17.99	15.15	19.81
		5300.0	17.97	15.02	19.75
		5320.0	17.58	14.51	19.32
		5500.0	16.67	13.88	18.51
		5520.0	17.05	14.28	18.89
		5540.0	17.24	14.59	19.12
		5560.0	17.50	14.83	19.38
		5580.0	17.88	15.32	19.80
		5600.0	18.21	15.81	20.18
		5620.0	18.12	15.94	20.18
		5640.0	18.10	16.32	20.31
		5660.0	18.29	16.59	20.53
		5680.0	18.18	16.83	20.57
		5700.0	14.37	12.50	16.55
		5720.0	17.28	15.88	19.65

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	5270.0	19.03	15.73	20.70
		5310.0	12.42	8.92	14.02
		5510.0	14.75	12.03	16.61
		5550.0	18.42	15.68	20.27
		5590.0	19.29	16.47	21.12
		5630.0	19.79	17.18	21.69
		5670.0	15.85	13.81	17.96
		5710.0	19.03	18.42	21.75
	400	5270.0	18.78	15.50	20.45
		5310.0	12.21	8.72	13.82
		5510.0	14.55	11.70	16.37
		5550.0	18.18	15.38	20.01
		5590.0	19.02	16.21	20.85
		5630.0	19.50	16.91	21.41
		5670.0	15.58	13.50	17.67
		5720.0	18.78	18.20	21.51
IEEE 802.11ac 80MHz	58.6	5290.0	10.70	7.41	12.37
		5530.0	10.77	7.91	12.58
		5610.0	15.72	13.22	17.66
		5690.0	16.03	14.05	18.16
	866.6	5290.0	10.46	7.06	12.09
		5530.0	10.52	7.68	12.34
		5610.0	15.42	12.90	17.35
		5690.0	15.78	13.78	17.90

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	5260.0	16.42	13.34	18.16
		5280.0	16.80	13.83	18.57
		5300.0	16.80	13.69	18.53
		5320.0	16.42	13.17	18.10
		5500.0	15.24	12.52	17.10
		5520.0	15.66	12.89	17.50
		5540.0	16.00	13.30	17.87
		5560.0	16.43	13.66	18.27
		5580.0	16.81	14.08	18.67
		5600.0	17.12	14.60	19.05
		5620.0	17.23	14.75	19.17
		5640.0	16.91	14.57	18.91
		5660.0	16.96	14.95	19.08
		5680.0	16.90	15.13	19.11
		5700.0	13.04	11.12	15.20
		5720.0	16.01	14.32	18.26
	173.4	5260.0	16.18	13.02	17.89
		5280.0	16.52	13.50	18.28
		5300.0	16.50	13.39	18.23
		5320.0	16.17	12.85	17.83
		5500.0	14.95	12.29	16.83
		5520.0	15.42	12.64	17.26
		5540.0	15.73	13.07	17.61
		5560.0	16.11	13.39	17.97
		5580.0	16.54	13.83	18.40
		5600.0	16.78	14.37	18.75
		5620.0	16.89	14.50	18.87
		5640.0	16.62	14.28	18.62
		5660.0	16.70	14.69	18.82
		5680.0	16.67	14.78	18.84
		5700.0	12.72	10.88	14.91
		5720.0	15.74	13.96	17.95

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.

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11ac 40MHz	27	5270.0	17.57	14.35	19.26
		5310.0	10.86	7.41	12.48
		5510.0	13.14	10.24	14.94
		5550.0	16.81	14.22	18.72
		5590.0	17.75	14.93	19.58
		5630.0	17.96	15.63	19.96
		5670.0	14.41	12.12	16.42
		5710.0	18.32	16.25	20.42
	400	5270.0	17.24	14.14	18.97
		5310.0	10.52	7.21	12.18
		5510.0	12.88	9.95	14.67
		5550.0	16.53	13.92	18.43
		5590.0	17.48	14.69	19.32
		5630.0	17.71	15.38	19.71
		5670.0	14.18	11.84	16.18
		5710.0	18.14	16.01	20.21
IEEE 802.11ac 80MHz	58.6	5290.0	9.18	5.92	10.86
		5530.0	9.19	6.27	10.98
		5610.0	14.07	11.54	16.00
		5690.0	14.51	12.54	16.65
	866.6	5290.0	8.88	5.71	10.59
		5530.0	8.92	6.02	10.72
		5610.0	13.72	11.34	15.70
		5690.0	14.30	12.25	16.41

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 802.11a CDD	6	5260.0	1	20	20.1	6.22	4.19	1	428.76	0.085
		5280.0	1	20	20.1	6.22	4.19	1	428.76	0.085
		5300.0	1	20	20.1	6.22	4.19	1	428.76	0.085
		5320.0	1	20	20.1	6.22	4.19	1	428.76	0.085
		5500.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5520.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5540.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5560.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5580.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5600.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5620.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5640.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5660.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5680.0	1	20	19.3	6.12	4.09	1	348.12	0.069
		5700.0	1	20	17.5	6.12	4.09	1	230	0.046
		5720.0	1	20	20	6.12	4.09	1	409	0.081
IEEE 802.11ac 20MHz CDD	13	5260.0	1	20	20.2	6.22	4.19	1	438.75	0.087
		5280.0	1	20	20.2	6.22	4.19	1	438.75	0.087
		5300.0	1	20	20.2	6.22	4.19	1	438.75	0.087
		5320.0	1	20	20.2	6.22	4.19	1	438.75	0.087
		5500.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5520.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5540.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5560.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5580.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5600.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5620.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5640.0	1	20	20.7	6.12	4.09	1	480.53	0.096
		5660.0	1	20	20.9	6.12	4.09	1	503.18	0.100
		5680.0	1	20	20.9	6.12	4.09	1	503.18	0.100
		5700.0	1	20	16.9	6.12	4.09	1	200.32	0.040
		5720.0	1	20	20	6.12	4.09	1	409	0.081

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 802.11ac 40MHz CDD	27	5270.0	1	20	20.8	6.22	4.19	1	503.75	0.100
		5310.0	1	20	14.1	6.22	4.19	1	107.7	0.021
		5510.0	1	20	16.7	6.12	4.09	1	191.3	0.038
		5550.0	1	20	21.8	6.12	4.09	1	619.05	0.123
		5590.0	1	20	21.8	6.12	4.09	1	619.05	0.123
		5630.0	1	20	21.8	6.12	4.09	1	619.05	0.123
		5670.0	1	20	18.1	6.12	4.09	1	264.07	0.053
		5710.0	1	20	21.9	6.12	4.09	1	633.47	0.126
IEEE 802.11ac 80MHz CDD	58.6	5290.0	1	20	12.5	6.22	4.19	1	74.51	0.015
		5530.0	1	20	12.7	6.12	4.09	1	76.16	0.015
		5610.0	1	20	18.3	6.12	4.09	1	276.52	0.055
		5690.0	1	20	18.3	6.12	4.09	1	276.52	0.055

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 802.11ac 20MHz CDD/BF ON	13	5260.0	1	20	18.7	9.23	8.38	1	621.22	0.124
		5280.0	1	20	18.7	9.23	8.38	1	621.22	0.124
		5300.0	1	20	18.7	9.23	8.38	1	621.22	0.124
		5320.0	1	20	18.7	9.23	8.38	1	621.22	0.124
		5500.0	1	20	18.7	9.13	8.18	1	606.39	0.121
		5520.0	1	20	18.7	9.13	8.18	1	606.39	0.121
		5540.0	1	20	18.7	9.13	8.18	1	606.39	0.121
		5560.0	1	20	18.7	9.13	8.18	1	606.39	0.121
		5580.0	1	20	18.7	9.13	8.18	1	606.39	0.121
		5600.0	1	20	19.2	9.13	8.18	1	680.38	0.135
		5620.0	1	20	19.2	9.13	8.18	1	680.38	0.135
		5640.0	1	20	19.2	9.13	8.18	1	680.38	0.135
		5660.0	1	20	19.2	9.13	8.18	1	680.38	0.135
		5680.0	1	20	19.2	9.13	8.18	1	680.38	0.135
		5700.0	1	20	15.3	9.13	8.18	1	277.17	0.055
		5720.0	1	20	18.4	9.13	8.18	1	565.92	0.113
IEEE 802.11ac 40MHz CDD/BF ON	27	5270.0	1	20	19.4	9.23	8.38	1	729.87	0.145
		5310.0	1	20	12.6	9.23	8.38	1	152.49	0.030
		5510.0	1	20	15.1	9.13	8.18	1	264.7	0.053
		5550.0	1	20	20.1	9.13	8.18	1	837.05	0.167
		5590.0	1	20	20.1	9.13	8.18	1	837.05	0.167
		5630.0	1	20	20.1	9.13	8.18	1	837.05	0.167
		5670.0	1	20	16.5	9.13	8.18	1	365.39	0.073
		5710.0	1	20	20.5	9.13	8.18	1	917.81	0.183
IEEE 802.11ac 80MHz CDD/BF ON	58.6	5290.0	1	20	11	9.23	8.38	1	105.5	0.021
		5530.0	1	20	11.1	9.13	8.18	1	105.38	0.021
		5610.0	1	20	16.8	9.13	8.18	1	391.52	0.078
		5690.0	1	20	16.8	9.13	8.18	1	391.52	0.078



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/ac mode is 2TX CDD.
6. We used the maximum antenna gain to provide MPE results.
7. The summary result is same as the original data, please refer test report number:1711FS11.

Simultaneous Transmitting:

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