



A Test Lab Techno Corp.

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MPE Report

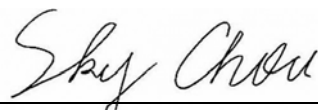
Test Report No.	: 1708FS17-01
Applicant	: Edimax Technology Co., Ltd.
Product Type	: AC1300 DBDC Ceiling-mount AP
Trade Name	: EDIMAX
Model Number	: EW-7479CAP, CAP1300, Office 1-2-3, Office +1, Office +3, Office WiFi System, Office WiFi System +1
Date of Received	: May 24, 2017
Test Period	: May 25, 2017
Date of Issued	: Sep. 20, 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)



Contents

1.	Description of Equipment under Test (EUT)	3
2.	Human Exposure Assessment	4
3.	RF Output Power	5
4.	Test Results	11



1. Description of Equipment under Test (EUT)

Applicant	Edimax Technology Co., Ltd. No.278, Xinhua 1st Rd., Neihu Dist., Taipei City, Taiwan			
Manufacturer	Edimax Technology Co., Ltd. No.278, Xinhua 1st Rd., Neihu Dist., Taipei City, Taiwan			
Product Type	AC1300 DBDC Ceiling-mount AP			
Trade Name	EDIMAX			
Model Number	EW-7479CAP, CAP1300, Office 1-2-3, Office +1, Office +3, Office WiFi System, Office WiFi System +1			
Model Number Different Description	Those model numbers differ from each other in selling region.			
FCC ID	NDD9574791704			
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 - 5700
	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 - 5700
	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 - 5670
	IEEE 802.11ac 80MHz U-NII Band II-A			5290
	IEEE 802.11ac 80MHz U-NII Band II-C			5530 - 5610
Antenna information	ANT	Model	Type	Max. Gain (dBi)
	Ant-0	RFMTA180704IM5B301	PIFA Antenna	4.56
	Ant-1	RFMTA180717IM5B301	PIFA Antenna	4.13
	G_{ANT}			4.35
	Directional Gain (refer to RF report)			7.36
Antenna Delivery	2TX / 2RX (CDD/ Beamforming on)			
RF Evaluation	0.322 mW/cm ²			
Temperature Range	0 ~ 40°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 802.11a	6	5260.0	17.77	17.90	20.85
		5280.0	17.73	17.91	20.83
		5300.0	17.70	17.81	20.77
		5320.0	17.74	17.82	20.79
		5500.0	16.43	17.58	20.05
		5520.0	16.53	17.55	20.08
		5540.0	16.63	17.67	20.19
		5560.0	16.41	17.35	19.92
		5580.0	16.37	17.25	19.84
		5600.0	16.46	17.61	20.08
		5620.0	16.48	17.61	20.09
		5640.0	16.47	17.73	20.16
		5660.0	16.16	17.80	20.07
		5680.0	16.14	17.78	20.05
		5700.0	15.42	17.21	19.42
	54	5260.0	17.52	17.63	20.59
		5280.0	17.49	17.63	20.57
		5300.0	17.43	17.59	20.52
		5320.0	17.45	17.53	20.50
		5500.0	16.09	17.25	19.72
		5520.0	16.18	17.18	19.72
		5540.0	16.42	17.42	19.96
		5560.0	16.19	17.10	19.68
		5580.0	16.08	16.93	19.54
		5600.0	16.15	17.32	19.78
		5620.0	16.11	17.35	19.78
		5640.0	16.09	17.42	19.82
		5660.0	15.89	17.55	19.81
		5680.0	15.80	17.42	19.70
		5700.0	15.12	16.93	19.13

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	17.75	18.03	20.90
		5280.0	17.77	18.03	20.91
		5300.0	17.82	17.98	20.91
		5320.0	17.76	17.93	20.86
		5500.0	16.96	18.44	20.77
		5520.0	17.03	18.46	20.81
		5540.0	17.03	18.48	20.83
		5560.0	16.73	18.00	20.42
		5580.0	16.85	18.13	20.55
		5600.0	16.96	18.32	20.70
		5620.0	16.90	18.38	20.71
		5640.0	16.87	18.41	20.72
		5660.0	16.60	18.43	20.62
		5680.0	16.51	18.45	20.60
		5700.0	15.27	17.31	19.42
	173.4	5260.0	17.47	17.80	20.65
		5280.0	17.49	17.77	20.64
		5300.0	17.53	17.69	20.62
		5320.0	17.39	17.63	20.52
		5500.0	16.63	18.10	20.44
		5520.0	16.80	18.14	20.53
		5540.0	16.78	18.09	20.49
		5560.0	16.40	17.63	20.07
		5580.0	16.52	17.80	20.22
		5600.0	16.65	18.00	20.39
		5620.0	16.60	18.04	20.39
		5640.0	16.49	18.13	20.40
		5660.0	16.30	18.08	20.29
		5680.0	16.19	18.14	20.28
		5700.0	15.00	17.09	19.18

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	19.55	19.60	22.59
		5310.0	14.33	14.50	17.43
		5510.0	15.61	16.73	19.22
		5550.0	19.13	20.02	22.61
		5590.0	19.17	20.02	22.63
		5630.0	18.77	19.89	22.38
		5670.0	17.38	18.93	21.23
	400	5270.0	19.22	19.38	22.31
		5310.0	14.08	14.22	17.16
		5510.0	15.23	16.44	18.89
		5550.0	18.82	19.78	22.34
		5590.0	18.83	19.73	22.31
		5630.0	18.48	19.59	22.08
		5670.0	17.05	18.62	20.92

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11ac 80MHz	58.6	5290.0	12.33	12.70	15.53
		5530.0	11.75	13.24	15.57
		5610.0	17.81	19.06	21.49
	866.6	5290.0	12.03	12.28	15.17
		5530.0	11.38	13.00	15.28
		5610.0	17.42	18.80	21.17

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 802.11a	6	5260.0	15.63	15.93	18.79
		5280.0	15.62	15.96	18.80
		5300.0	15.62	15.92	18.78
		5320.0	15.64	15.82	18.74
		5500.0	14.40	15.57	18.03
		5520.0	14.52	15.62	18.12
		5540.0	14.61	15.76	18.23
		5560.0	14.27	15.35	17.85
		5580.0	14.31	15.46	17.93
		5600.0	14.42	15.60	18.06
		5620.0	14.35	15.57	18.01
		5640.0	14.38	15.58	18.03
		5660.0	14.12	15.62	17.94
		5680.0	14.03	15.71	17.96
		5700.0	13.48	15.13	17.39
	54	5260.0	15.39	15.69	18.55
		5280.0	15.42	15.65	18.55
		5300.0	15.37	15.66	18.53
		5320.0	15.38	15.55	18.48
		5500.0	14.04	15.21	17.67
		5520.0	14.19	15.25	17.76
		5540.0	14.37	15.42	17.94
		5560.0	13.99	15.03	17.55
		5580.0	13.95	15.21	17.64
		5600.0	14.13	15.26	17.74
		5620.0	14.08	15.28	17.73
		5640.0	14.02	15.32	17.73
		5660.0	13.80	15.33	17.64
		5680.0	13.78	15.44	17.70
		5700.0	13.12	14.84	17.07

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	15.72	15.99	18.87
		5280.0	15.64	15.99	18.83
		5300.0	15.72	15.93	18.84
		5320.0	15.65	15.89	18.78
		5500.0	14.88	16.31	18.66
		5520.0	15.04	16.40	18.78
		5540.0	15.06	16.44	18.81
		5560.0	14.75	16.03	18.45
		5580.0	14.75	16.11	18.49
		5600.0	14.85	16.36	18.68
		5620.0	14.87	16.34	18.68
		5640.0	14.83	16.30	18.64
		5660.0	14.55	16.38	18.57
		5680.0	14.41	16.40	18.53
		5700.0	13.31	15.39	17.48
	173.4	5260.0	15.48	15.65	18.58
		5280.0	15.36	15.62	18.50
		5300.0	15.42	15.59	18.52
		5320.0	15.38	15.59	18.50
		5500.0	14.59	15.95	18.33
		5520.0	14.80	16.17	18.55
		5540.0	14.80	16.19	18.56
		5560.0	14.48	15.72	18.15
		5580.0	14.50	15.85	18.24
		5600.0	14.62	16.10	18.43
		5620.0	14.60	16.05	18.40
		5640.0	14.52	16.02	18.34
		5660.0	14.34	16.10	18.32
		5680.0	14.13	16.08	18.22
		5700.0	13.05	15.07	17.19

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	17.26	17.50	20.39
		5310.0	12.28	12.43	15.37
		5510.0	13.51	14.75	17.18
		5550.0	17.02	17.95	20.52
		5590.0	17.11	18.04	20.61
		5630.0	16.74	17.86	20.35
		5670.0	15.33	16.85	19.17
	400	5270.0	16.92	17.16	20.05
		5310.0	12.03	12.13	15.09
		5510.0	13.22	14.49	16.91
		5550.0	16.80	17.58	20.22
		5590.0	16.86	17.81	20.37
		5630.0	16.42	17.56	20.04
		5670.0	14.99	16.63	18.90

Band	Data Rate (Mbps)	Frequency (MHz)	Average Conducted power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11ac 80MHz	58.6	5290.0	10.35	10.58	13.48
		5530.0	9.72	11.18	13.52
		5610.0	15.81	16.93	19.42
	866.6	5290.0	10.11	10.35	13.24
		5530.0	9.42	10.82	13.19
		5610.0	15.55	16.69	19.17

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



4. Test Results

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 802.11a_CDD	6	5260	1	20	20.90	4.35	2.72	1	334.630	0.067
		5280	1	20	20.90	4.35	2.72	1	334.630	0.067
		5300	1	20	20.90	4.35	2.72	1	334.630	0.067
		5320	1	20	20.90	4.35	2.72	1	334.630	0.067
		5500	1	20	20.20	4.35	2.72	1	284.820	0.057
		5520	1	20	20.20	4.35	2.72	1	284.820	0.057
		5540	1	20	20.20	4.35	2.72	1	284.820	0.057
		5560	1	20	20.20	4.35	2.72	1	284.820	0.057
		5580	1	20	20.20	4.35	2.72	1	284.820	0.057
		5600	1	20	20.20	4.35	2.72	1	284.820	0.057
		5620	1	20	20.20	4.35	2.72	1	284.820	0.057
		5640	1	20	20.20	4.35	2.72	1	284.820	0.057
		5660	1	20	20.20	4.35	2.72	1	284.820	0.057
		5680	1	20	20.20	4.35	2.72	1	284.820	0.057
		5700	1	20	20.20	4.35	2.72	1	284.820	0.057
IEEE 802.11ac 20MHz_CDD	13	5260	1	20	21.00	4.35	2.72	1	342.430	0.068
		5280	1	20	21.00	4.35	2.72	1	342.430	0.068
		5300	1	20	21.00	4.35	2.72	1	342.430	0.068
		5320	1	20	21.00	4.35	2.72	1	342.430	0.068
		5500	1	20	20.90	4.35	2.72	1	334.630	0.067
		5520	1	20	20.90	4.35	2.72	1	334.630	0.067
		5540	1	20	20.90	4.35	2.72	1	334.630	0.067
		5560	1	20	20.90	4.35	2.72	1	334.630	0.067
		5580	1	20	20.90	4.35	2.72	1	334.630	0.067
		5600	1	20	20.90	4.35	2.72	1	334.630	0.067
		5620	1	20	20.90	4.35	2.72	1	334.630	0.067
		5640	1	20	20.90	4.35	2.72	1	334.630	0.067
		5660	1	20	20.90	4.35	2.72	1	334.630	0.067
		5680	1	20	20.90	4.35	2.72	1	334.630	0.067
		5700	1	20	20.90	4.35	2.72	1	334.630	0.067
IEEE 802.11ac 40MHz_CDD	27	5270	1	20	22.70	4.35	2.72	1	506.490	0.101
		5310	1	20	17.50	4.35	2.72	1	152.960	0.030
		5510	1	20	19.30	4.35	2.72	1	231.510	0.046
		5550	1	20	22.70	4.35	2.72	1	506.490	0.101
		5590	1	20	22.70	4.35	2.72	1	506.490	0.101
		5630	1	20	22.70	4.35	2.72	1	506.490	0.101
		5670	1	20	22.70	4.35	2.72	1	506.490	0.101
IEEE 802.11ac 80MHz_CDD	58.6	5290	1	20	15.60	4.35	2.72	1	98.760	0.020
		5530	1	20	15.60	4.35	2.72	1	98.760	0.020
		5610	1	20	21.60	4.35	2.72	1	393.160	0.078

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 802.11a _CDD _BF ON	6	5260	1	20	18.90	7.36	5.45	1	423.050	0.084
		5280	1	20	18.90	7.36	5.45	1	423.050	0.084
		5300	1	20	18.90	7.36	5.45	1	423.050	0.084
		5320	1	20	18.90	7.36	5.45	1	423.050	0.084
		5500	1	20	18.30	7.36	5.45	1	368.470	0.073
		5520	1	20	18.30	7.36	5.45	1	368.470	0.073
		5540	1	20	18.30	7.36	5.45	1	368.470	0.073
		5560	1	20	18.30	7.36	5.45	1	368.470	0.073
		5580	1	20	18.30	7.36	5.45	1	368.470	0.073
		5600	1	20	18.30	7.36	5.45	1	368.470	0.073
		5620	1	20	18.30	7.36	5.45	1	368.470	0.073
		5640	1	20	18.30	7.36	5.45	1	368.470	0.073
		5660	1	20	18.30	7.36	5.45	1	368.470	0.073
		5680	1	20	18.30	7.36	5.45	1	368.470	0.073
		5700	1	20	18.30	7.36	5.45	1	368.470	0.073
IEEE 802.11ac 20MHz_CDD _BF ON	13	5260	1	20	18.90	7.36	5.45	1	423.050	0.084
		5280	1	20	18.90	7.36	5.45	1	423.050	0.084
		5300	1	20	18.90	7.36	5.45	1	423.050	0.084
		5320	1	20	18.90	7.36	5.45	1	423.050	0.084
		5500	1	20	18.90	7.36	5.45	1	423.050	0.084
		5520	1	20	18.90	7.36	5.45	1	423.050	0.084
		5540	1	20	18.90	7.36	5.45	1	423.050	0.084
		5560	1	20	18.90	7.36	5.45	1	423.050	0.084
		5580	1	20	18.90	7.36	5.45	1	423.050	0.084
		5600	1	20	18.90	7.36	5.45	1	423.050	0.084
		5620	1	20	18.90	7.36	5.45	1	423.050	0.084
		5640	1	20	18.90	7.36	5.45	1	423.050	0.084
		5660	1	20	18.90	7.36	5.45	1	423.050	0.084
		5680	1	20	18.90	7.36	5.45	1	423.050	0.084
		5700	1	20	18.90	7.36	5.45	1	423.050	0.084
IEEE 802.11ac 40MHz_CDD _BF ON	27	5270	1	20	20.50	7.36	5.45	1	611.500	0.122
		5310	1	20	15.40	7.36	5.45	1	188.970	0.038
		5510	1	20	17.20	7.36	5.45	1	286.020	0.057
		5550	1	20	20.70	7.36	5.45	1	640.320	0.127
		5590	1	20	20.70	7.36	5.45	1	640.320	0.127
		5630	1	20	20.70	7.36	5.45	1	640.320	0.127
		5670	1	20	20.70	7.36	5.45	1	640.320	0.127
IEEE 802.11ac 80MHz_CDD _BF ON	58.6	5290	1	20	13.50	7.36	5.45	1	122.010	0.024
		5530	1	20	13.60	7.36	5.45	1	124.850	0.025
		5610	1	20	19.50	7.36	5.45	1	485.730	0.097



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. The MPE results are evaluated by lowest data rate for WLAN.
4. The device operating IEEE 802.11 a/b/g/n/ac mode is 2TX CDD.
5. The summary result is same as the original data, please refer test report number:1707FS12-01

Simultaneous Transmitting:

$$\text{Total MPE} = 2.4\text{GHz MPE} + 5\text{GHz MPE} = 0.062 + 0.260 = 0.322 \text{ mw/cm}^2 < 1 \text{ mw/cm}^2$$