



A Test Lab Techno Corp.


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MPE Report

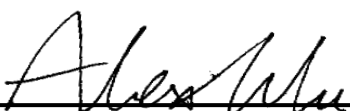


Test Report No.	: 1009FS16
Applicant	: Delta Mobile Systems
Manufacturer	: Trison Technology Corporation
Product Type	: DM300 WiFi Module
Trade Name	: DM300
Model Number	: DM300
FCC ID	: YSI-DM300-DM300I
Dates of Test	: Sep. 21, 2010
Test Specification	: 47 CFR § 2.1091 47 CFR §1.1310 ANSI / IEEE Std.C95.1-2005
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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Sam Chuang Sep. 28, 2010
Approve Signer



Alex Wu Sep. 28, 2010
Testing Engineer



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1. Description of Equipment under Test (EUT)

Applicant	Delta Mobile Systems
Applicant Address	700 Remington Road, 2nd Floor, Schaumburg, IL. 60173
Manufacturer	Trison Technology Corporation
Manufacturer Address	No.3 Kung-Yeh 12th Rd., Ping-Jen Industrial Park, Ping-Jen City, Tao Yuan County, Taiwan, R.O.C
Product Type	DM300 WiFi Module
Trade Name	DM300
Model Number	DM300
Frequency Range	2412 - 2462 MHz (IEEE 802.11b / IEEE 802.11g)
Transmit Power (mean conducted power)	External Ant. Port : IEEE 802.11b: 0.016 W / 11.94 dBm External Ant. Port : IEEE 802.11g: 0.044 W / 16.45 dBm Internal Ant. Port : IEEE 802.11b: 0.042 W / 16.22 dBm Internal Ant. Port : IEEE 802.11g: 0.107 W / 20.31 dBm
Modulation Technique	IEEE 802.11b:DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g:DSSS(CCK, DQPSK, DBPSK)+ OFDM(QPSK, BPSK, 16-QAM, 64-QAM)
Antenna Designation	External Ant. : External Type Internal Ant. : PIFA Type
Antenna Specification	External Ant. : 2.0 dBi Internal Ant. : 2.3 dBi
Temperature Range	-30 ~ +70°C

The above equipment was tested by Compliance Certification Services Inc. 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



1.1 RF Output Power

Band	Data Rate	Frequency (MHz)	Time-Average Power (dBm)	Peak Power (dBm)	Worst Case
IEEE 802.11b PIFA Type	1 M	2412	7.75	11.47	<input type="checkbox"/>
		2437	8.00	11.90	<input type="checkbox"/>
		2462	7.50	11.21	<input type="checkbox"/>
	2 M	2412	7.72	11.47	<input type="checkbox"/>
		2437	8.04	11.87	<input type="checkbox"/>
		2462	7.52	11.24	<input type="checkbox"/>
	5.5 M	2412	7.69	11.39	<input type="checkbox"/>
		2437	7.98	11.94	<input checked="" type="checkbox"/>
		2462	7.50	11.24	<input type="checkbox"/>
	11 M	2412	7.66	11.36	<input type="checkbox"/>
		2437	8.15	11.76	<input type="checkbox"/>
		2462	7.50	11.26	<input type="checkbox"/>
IEEE 802.11g PIFA Type	6 M	2412	7.73	16.13	<input type="checkbox"/>
		2437	8.16	15.59	<input type="checkbox"/>
		2462	7.77	14.80	<input type="checkbox"/>
	9 M	2412	7.64	16.33	<input type="checkbox"/>
		2437	8.12	15.74	<input type="checkbox"/>
		2462	7.72	14.83	<input type="checkbox"/>
	12 M	2412	7.61	16.21	<input type="checkbox"/>
		2437	8.13	15.64	<input type="checkbox"/>
		2462	7.72	14.73	<input type="checkbox"/>
	18 M	2412	7.78	16.45	<input checked="" type="checkbox"/>
		2437	8.11	15.82	<input type="checkbox"/>
		2462	7.67	14.91	<input type="checkbox"/>
	24 M	2412	7.69	16.20	<input type="checkbox"/>
		2437	8.07	15.64	<input type="checkbox"/>
		2462	7.65	14.80	<input type="checkbox"/>
	36 M	2412	7.54	16.32	<input type="checkbox"/>
		2437	8.02	15.73	<input type="checkbox"/>
		2462	7.61	14.89	<input type="checkbox"/>
	48 M	2412	7.57	16.36	<input type="checkbox"/>
		2437	7.94	15.82	<input type="checkbox"/>
		2462	7.63	14.97	<input type="checkbox"/>
	54 M	2412	7.55	16.31	<input type="checkbox"/>
		2437	7.92	15.76	<input type="checkbox"/>
		2462	7.60	14.98	<input type="checkbox"/>



Band	Data Rate	Frequency (MHz)	Time-Average Power (dBm)	Peak Power (dBm)	Worst Case
IEEE 802.11b External Type	1 M	2412	11.61	14.74	<input type="checkbox"/>
		2437	12.33	16.11	<input type="checkbox"/>
		2462	12.30	16.09	<input type="checkbox"/>
	2 M	2412	11.44	14.65	<input type="checkbox"/>
		2437	12.35	16.08	<input type="checkbox"/>
		2462	12.32	16.15	<input type="checkbox"/>
	5.5 M	2412	11.33	14.54	<input type="checkbox"/>
		2437	12.20	16.03	<input type="checkbox"/>
		2462	12.15	16.08	<input type="checkbox"/>
	11 M	2412	11.33	14.83	<input type="checkbox"/>
		2437	12.37	16.15	<input type="checkbox"/>
		2462	12.28	16.22	<input checked="" type="checkbox"/>
IEEE 802.11g External Type	6 M	2412	11.60	19.57	<input type="checkbox"/>
		2437	12.51	20.04	<input type="checkbox"/>
		2462	12.63	20.19	<input type="checkbox"/>
	9 M	2412	11.50	19.63	<input type="checkbox"/>
		2437	12.52	20.08	<input type="checkbox"/>
		2462	12.55	20.15	<input type="checkbox"/>
	12 M	2412	11.45	19.45	<input type="checkbox"/>
		2437	12.52	19.92	<input type="checkbox"/>
		2462	12.60	20.13	<input type="checkbox"/>
	18 M	2412	11.44	19.69	<input type="checkbox"/>
		2437	12.51	20.06	<input type="checkbox"/>
		2462	12.54	20.31	<input checked="" type="checkbox"/>
	24 M	2412	11.40	19.50	<input type="checkbox"/>
		2437	12.41	19.99	<input type="checkbox"/>
		2462	12.55	20.16	<input type="checkbox"/>
	36 M	2412	11.32	19.52	<input type="checkbox"/>
		2437	12.35	19.96	<input type="checkbox"/>
		2462	12.51	20.22	<input type="checkbox"/>
	48 M	2412	10.59	19.06	<input type="checkbox"/>
		2437	11.83	19.52	<input type="checkbox"/>
		2462	12.05	19.80	<input type="checkbox"/>
	54 M	2412	10.75	19.13	<input type="checkbox"/>
		2437	11.83	19.55	<input type="checkbox"/>
		2462	12.10	19.72	<input type="checkbox"/>



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

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

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.



2.1 Test Result

Band	Data Rate	Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	[P]+ [G] (W) [TP]	Duty Cycle	Power Density [S]
IEEE 802.11b PIFA Type	11	2412.0	1.000	20	11.36	2.30	0.014	1.000	0.003
		2437.0	1.000	20	11.76	2.30	0.016	1.000	0.003
		2462.0	1.000	20	11.26	2.30	0.014	1.000	0.003
	5.5	2412.0	1.000	20	11.39	2.30	0.014	1.000	0.003
		2437.0	1.000	20	11.94	2.30	0.016	1.000	0.003
		2462.0	1.000	20	11.24	2.30	0.014	1.000	0.003
IEEE 802.11g PIFA Type	18	2412.0	1.000	20	16.45	2.30	0.046	1.000	0.009
		2437.0	1.000	20	15.82	2.30	0.040	1.000	0.008
		2462.0	1.000	20	14.91	2.30	0.032	1.000	0.006
	54	2412.0	1.000	20	16.31	2.30	0.044	1.000	0.009
		2437.0	1.000	20	15.76	2.30	0.039	1.000	0.008
		2462.0	1.000	20	14.98	2.30	0.033	1.000	0.006

Band	Data Rate	Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	[P]+ [G] (W) [TP]	Duty Cycle	Power Density [S]
IEEE 802.11b External Type	11	2412.0	1.000	20	14.83	2.00	0.048	1.000	0.006
		2437.0	1.000	20	16.15	2.00	0.065	1.000	0.008
		2462.0	1.000	20	16.22	2.00	0.066	1.000	0.008
IEEE 802.11g External Type	18	2412.0	1.000	20	19.69	2.00	0.148	1.000	0.018
		2437.0	1.000	20	20.06	2.00	0.161	1.000	0.019
		2462.0	1.000	20	20.31	2.00	0.170	1.000	0.021
	54	2412.0	1.000	20	19.13	2.00	0.130	1.000	0.016
		2437.0	1.000	20	19.55	2.00	0.143	1.000	0.017
		2462.0	1.000	20	19.72	2.00	0.149	1.000	0.018