A Test Lab Techno Corp.

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MPE Report

Test Report No.	：	**1008FS11**
Applicant	：	**XAC Automation Corporation**
Manufacturer	：	**XAC Automation Corporation**
Product Type	：	**Portable Terminal**
Trade Name	：	**FDC**
Model Number	：	**FD-400eTi**
Dates of Test	：	**Aug. 05, 2010**
Test Specification	：	**47 CFR § 2.1091**
		47 CFR §1.1310
		ANSI / IEEE Std.C95.1-1999
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.

Sam Chuang **Aug. 06, 2010**
Approve Signer

Alex Wu **Aug. 06, 2010**
Testing Engineer

Contents

1. Description of Equipment under Test (EUT)

Applicant	XAC Automation Corporation
Applicant Address	4F., NO.30, INDUSTRY E. RD. IX, SCIENCE-BASED INDUSTRIAL PARK, HSIN-CHU,Taiwan, R.O.C.
Manufacturer	XAC Automation Corporation
Manufacturer Address	4F., NO.30, INDUSTRY E. RD. IX, SCIENCE-BASED INDUSTRIAL PARK, HSIN-CHU,Taiwan, R.O.C.
Product Type	Portable Terminal
Trade Name	FDC
Model Number	FD-400eTi
Module Used	WWAN Module: Cinterion, TC63i
Frequency Range	824.2 - 848.8 MHz GPRS 850 1850.2 - 1909.8 MHz GPRS 1900
Transmit Power (conducted power)	GPRS 850: 1.778 W / 32.50 dBm GPRS 1900: 0.813 W / 29.20 dBm
Antenna Specification	GPRS 850: 2.7 dBi GPRS 1900: 1.3 dBi
Antenna Designation	FPCB Type
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	Date Rate	CH	Frequency (MHz)	Avg burst Conducted power (dBm)	Worst Case
GPRS850	4Down1Up	128	824.2	32.40	☐
		190	836.6	32.30	☐
		251	848.8	**32.50**	■
	3Down2Up	128	824.2	31.10	☐
		190	836.6	31.00	☐
		251	848.8	31.10	☐
	2Down3Up	128	824.2	29.30	☐
		190	836.6	29.20	☐
		251	848.8	29.30	☐
	1Down4Up	128	824.2	27.50	☐
		190	836.6	27.40	☐
		251	848.8	27.50	☐
GPRS1900	4Down1Up	512	1850.2	**29.10**	■
		661	1909.8	29.00	☐
		810	1909.8	28.90	☐
	3Down2Up	512	1850.2	27.30	☐
		661	1909.8	27.30	☐
		810	1909.8	27.20	☐
	2Down3Up	512	1850.2	25.70	☐
		661	1909.8	25.70	☐
		810	1909.8	25.60	☐
	1Down4Up	512	1850.2	24.00	☐
		661	1909.8	24.00	☐
		810	1909.8	23.90	☐

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]	Power Density [S]	Min. distance (cm)
GPRS 850	4Down1Up	824.2	0.549	20	32.40	2.70	3.236	0.322	20cm
		836.6	0.558	20	32.30	2.70	3.162	0.315	20cm
		848.8	0.566	20	32.50	2.70	3.311	0.330	20cm
GPRS 1900	4Down1Up	1850.2	1.000	20	29.10	1.30	1.096	0.109	20cm
		1880.0	1.000	20	29.00	1.30	1.072	0.107	20cm
		1909.8	1.000	20	28.90	1.30	1.047	0.104	20cm