



# A Test Lab Techno Corp.

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## MPE Report



<b>Test Report No.</b>	<b>: 0811FS11</b>
<b>Applicant</b>	<b>: XAC Automation Corporation</b>
<b>Manufacturer</b>	<b>: XAC Automation Corporation</b>
<b>Model Name</b>	<b>: Portable Terminal</b>
<b>Trade Mark</b>	<b>: FDC</b>
<b>Model Number</b>	<b>: FD-400</b>
<b>FCC ID</b>	<b>: MQT-FD400</b>
<b>Dates of Test</b>	<b>: Oct. 14, 2008</b>
<b>Test Specification</b>	<b>: 47 CFR § 2.1091</b> <b>47 CFR §1.1310</b>
<b>Location of Test Lab.</b>	<b>: Chang-an Lab.</b>

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.

  
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## 1. Description of Equipment Under Test (EUT)

**Applicant :**

**XAC Automation Corporation**

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 Name :** Portable Terminal  
**Trade Mark :** FDC  
**Model Name :** FD-400  
**Frequency Range :** 824 - 849 MHz (GPRS/EGPRS 850)  
1850 - 1910 MHz (GPRS/EGPRS 1900)  
826 - 847 MHz (WCDMA/HSDPA Band V)  
1852 - 1908 MHz (WCDMA/HSDPA Band II)  
**Transmit Power (mean EIRP) :** 30.96 dBm GPRS 850  
26.25 dBm EGPRS 850  
27.60 dBm GPRS 1900  
25.00 dBm EGPRS 1900  
26.25 dBm WCDMA Band V  
26.82 dBm HSDPA Band V  
26.41 dBm WCDMA Band II  
26.91 dBm HSDPA Band II  
**Modulation Technique :** GMSK / QPSK  
**Antenna Specification :** 1.0 dBi  
**Antenna Designation :** Internal Antenna  
**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



## **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
<p>Equation from page 18 of OET Bulletin 65, Edition 97-01</p> $S = \frac{PG}{4\pi R^2}$ <p>Where</p> <p>S: power density</p> <p>P: power input to the antenna</p> <p>G: power gain of the antenna in the direction of interest relative to an isotropic radiator.</p> <p>R: distance to the center of radiation of the antenna.</p>



## 2.1 Test Result

EUT parameter	
Max output power in Watt (TP)	GPRS 850 : 1.299 W EGPRS 850 : 0.370 W GPRS 1900 : 1.302 W EGPRS 1900 : 0.572 W WCDMA Band V : 0.312 W WCDMA Band II : 0.401 W
Antenna gain (G)	1.0 dBi

### GPRS 850

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W) [TP]	Power Density [S]	Min. distance (cm)
824.2	0.549	20	30.95	1.0	1.567	0.312	20
836.6	0.558	20	30.96	1.0	1.570	0.313	20
848.8	0.566	20	30.90	1.0	1.549	0.308	20

### EGPRS 850

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W) [TP]	Power Density [S]	Min. distance (cm)
824.2	0.549	20	26.25	1	0.531	0.106	20
836.6	0.558	20	26.21	1	0.526	0.105	20
848.8	0.566	20	26.09	1	0.512	0.102	20

### GPRS 1900

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W) [TP]	Power Density [S]	Min. distance (cm)
1850.2	1.000	20	27.60	1	0.724	0.144	20
1880.0	1.000	20	27.51	1	0.710	0.141	20
1909.8	1.000	20	27.45	1	0.700	0.139	20



### EGPRS 1900

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W)	Power Density [S]	Min. distance (cm)
1850.2	1.000	20	24.90	1	0.389	0.077	20
1880.0	1.000	20	24.80	1	0.380	0.076	20
1909.8	1.000	20	25.00	1	0.398	0.079	20

### WCDMA Band V

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W) [TP]	Power Density [S]	Min. distance (cm)
826.4	0.551	20	26.00	1	0.501	0.100	20
836.4	0.558	20	26.25	1	0.531	0.106	20
846.4	0.564	20	26.02	1	0.504	0.100	20

### HSDPA Band V

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W) [TP]	Power Density [S]	Min. distance (cm)
826.4	0.551	20	26.57	1	0.571	0.114	20
836.4	0.558	20	26.82	1	0.605	0.120	20
846.4	0.564	20	26.60	1	0.575	0.115	20

### WCDMA Band II

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W)	Power Density [S]	Min. distance (cm)
1852.4	1.000	20	25.60	1	0.457	0.091	20
1880.0	1.000	20	26.41	1	0.551	0.110	20
1907.6	1.000	20	25.55	1	0.452	0.090	20

### HSDPA Band II

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W)	Power Density [S]	Min. distance (cm)
1852.4	1.000	20	26.13	1	0.516	0.103	20
1880.0	1.000	20	26.91	1	0.618	0.123	20
1907.6	1.000	20	26.60	1	0.575	0.115	20