A Test Lab Techno Corp.

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

MPE Report

Test Report No.	：	**0902FS14-01**
Applicant	：	**Unitech Electronics Co., Ltd.**
Manufacturer	：	**EMMT SYSTEMS CORPORATION**
Model Name	：	**Fixed Data Collection Terminal**
Trade Mark	：	**unitech**
Model Number	：	**RS700**
FCC ID	：	**HLERS700**
Dates of Test	：	**Feb. 13 ~23 , 2009**
Test Specification	：	**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.

Country Huang **20090226**
Measurement Center Manager

John Cheng **20090226**
Testing Engineer

Contents

1. Description of Equipment Under Test (EUT)

Applicant：	**Unitech Electronics Co., Ltd.** **5F, No136, Lane 235, Pao-Chiao Rd., Hsin-Tien City, Taipei Hsien, Taiwan**

Manufacturer：	EMMT SYSTEMS CORPORATION
Manufacturer Address：	TAICHUNG EXPORT PROCESSING ZONE P.O BOX 1-45, TAN-TZU TAICHUNG. NO.16-1 NAN-ER ROAD, TAN-TZU,TAICHUNG HSIEN,TAIWAN R.O.C
Product Name：	Fixed Data Collection Terminal
Trade Mark：	unitech
Model Name：	RS700
Frequency Range：	WiFi : 2412 - 2460 MHz RFID : 902.75 - 927.25 MHz
Transmit Power (mean EIRP)：	WiFi_b : 19.31 dBm WiFi_g : 18.43 dBm RFID : 26.92 dBm
Modulation Technique：	WiFi (BPSK / QPSK) RFID
Antenna Specification：	WiFi : 2.2 dBi RFID : 8.5 dBi
Antenna Designation：	Small circular polarized patch 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
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

EUT parameter	
Max output power in Watt (TP)	WiFi_b : 0.085 W WiFi_g : 0.070 W RFID : 0.492 W
Antenna gain (G)	WiFi : 2.2 dBi
	RFID : 8.5 dBi

WiFi_b

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)
2412	1.000	20	18.42	2.2	0.115	0.022959	20
2437	1.000	20	17.89	2.2	0.102	0.020321	20
2462	1.000	20	19.31	2.2	0.142	**0.028181**	20

WiFi_g

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)
2402	1.000	20	16.96	0	0.050	0.009884	20
2441	1.000	20	16.82	0	0.048	0.009571	20
2480	1.000	20	18.43	0	0.070	**0.013866**	20

RFID

Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	Power+Ant Gain (W)	Power Density [S]	Min. distance (cm)
902.75	0.602	20	26.92	8.5	3.483	**0.028**	100
914.75	0.610	20	26.89	8.5	3.459	0.028	100
927.25	0.618	20	26.85	8.5	3.428	0.027	100