A Test Lab Techno Corp.

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MPE Report

Test Report No.	:	**0907FS11**
Applicant	:	**Elitegroup Computer Systems Co., LTD.**
Manufacturer	:	**Elitegroup Computer Systems Co., LTD.**
Model Name	:	**HSDPA mini-PCIe Modem Module**
Trade Mark	:	ECS ELITEGROUP
Model Number	:	**M320, M320A, M320B**
FCC ID	:	**WL6M320**
Dates of Test	:	**July 03, 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.
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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 **20090704**
Approval

Alex Wu **20090704**
Testing Engineer

Contents

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

Applicant：	**Elitegroup Computer Systems Co., LTD.** No. 239, Sec. 2, Ti Ding Blvd., Taipei, Taiwan
Manufacturer：	Elitegroup Computer Systems Co., LTD.
Manufacturer Address：	No. 239, Sec. 2, Ti Ding Blvd., Taipei, Taiwan
Product Name：	HSDPA mini-PCIe Modem Module
Trade Mark：	ECS ELITEGROUP
Model Name：	M320, M320A, M320B
Frequency Range：	824.2 - 848.8 MHz (GSM/GPRS/EDGE 850) 1850.2 - 1909.8 MHz (GSM/GPRS/EDGE 1900) 826.4 - 846.4 MHz (WCDMA/HSDPA Band V) 1852.4 - 1907.6 MHz (WCDMA/HSDPA Band II)
Maximum Output Power to Antenna： **(Conducted)**	31.40 dBm (GSM/GPRS 850) 27.20 dBm (EDGE 850) 28.90 dBm (GSM/GPRS 1900) 26.30 dBm (EDGE 1900) 23.87 dBm (WCDMA/HSDPA Band V) 23.26 dBm (WCDMA/HSDPA Band II)
Hardware Version：	M320-FTA (M320) M320A-FTA (M320A) M320B-FTA (M320B)
Software Version：	M320-01.08.03
Modulation Technique：	GMSK (GSM/GPRS) 8PSK (EDGE) QPSK (WCDMA) QPSK 16QAM (HSDPA)
Antenna Specification：	1.78 dBi (GSM/GPRS/EDGE 850) 1.92 dBi (GSM/GPRS/EDGE 1900) 1.78 dBi (WCDMA/HSDPA Band V) 1.92 dBi (WCDMA/HSDPA Band II)
Antenna Designation：	External 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

GSM 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	31.4	1.78	2.080	**0.052**	20
836.6	0.558	20	31.2	1.47	1.849	0.046	20
848.8	0.566	20	31.1	0.93	1.596	0.040	20

EDGE 850 (3Down2Up)

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	27.1	1.78	0.773	**0.038**	20
836.6	0.558	20	27.2	1.47	0.736	0.037	20
848.8	0.566	20	27.2	0.93	0.650	0.032	20

GSM 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	28.90	0.84	0.942	0.023	20
1880.0	1.000	20	28.60	1.52	1.028	0.026	20
1909.8	1.000	20	28.80	1.92	1.180	**0.029**	20

EDGE 1900 (3Down2Up)

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	26.30	0.84	0.518	0.026	20
1880.0	1.000	20	26.10	1.52	0.578	0.029	20
1909.8	1.000	20	26.00	1.92	0.619	**0.031**	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	23.64	1.78	0.348	**0.069**	20
836.4	0.558	20	23.09	1.47	0.286	0.057	20
846.4	0.564	20	23.15	0.93	0.256	0.051	20

HSDPA Band V (Sub-Test 2)

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	23.50	1.78	0.337	**0.067**	20
836.4	0.558	20	23.15	1.47	0.290	0.058	20
846.4	0.564	20	23.24	0.93	0.261	0.052	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	22.54	0.84	0.218	0.043	20
1880.0	1.000	20	22.59	1.52	0.258	0.051	20
1907.6	1.000	20	23.04	1.92	0.313	**0.062**	20

HSDPA Band II (Sub-Test 1)

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	22.72	0.84	0.227	0.045	20
1880.0	1.000	20	22.49	1.52	0.252	0.050	20
1907.6	1.000	20	23.26	1.92	0.330	**0.066**	20