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Report No.: 1407RSU04503 Report Version: Issue Date: 08-06-2014

# RF Exposure Evaluation Declaration

FCC ID: XHWEGD078

APPLICANT: E-matic

**Application Type:** Certification

7.85 Inch Tablet **Product:** 

EGD078, EGD078BL, EGD078BU, EGD0780PR, Model No.:

EGD078RD, EGD078WR

FCC Classification: FCC Part 15 Spread Spectrum Transmitter(DSS)

Aug 01 ~ 05, 2014 Test Date:

Reviewed By : Robin Wu (Robin Wu)

: Marlinchen Approved By

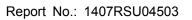
(Marlin Chen)

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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# **Revision History**

Report No.	Version	Description	Issue Date
1407RSU04503	Rev. 01	Initial report	08-06-2014

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# 1. RF Exposure Evaluation

### 1.1. Limits

#### SAR Test Exclusion Thresholds for 100 MHz - 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test
300	27	55	82	110	137	Exclusion
450	22	45	67	89	112	Threshold
835	16	33	49	66	82	(mW)
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	
MHz	30	35	40	45	50	mm
150	232	271	310	349	387	SAR Test
300	164	192	219	246	274	Exclusion
450	134	157	179	201	224	Threshold
835	98	115	131	148	164	(mW)
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

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Note :The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] \*  $[\sqrt{f(GHz)}] \le 3.0$  for 1-g SAR and  $\le 7.5$  for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is  $\leq$  50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

#### 1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

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## 1.3. Test Result of RF Exposure Evaluation

Product	7.85 Inch Tablet
Test Item	RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.47dBi for 2.4GHz (WLAN) and 1.56dBi for 2.4GHz (Bluetooth) in logarithm scale.

### **Output Power into Antenna:**

Test Mode	Frequency Band (MHz)	Maximum output power to antenna (mW)	SAR Test Exclusion Threshold (mW)
Bluetooth	2402~2480	0.726	10
WLAN	2412~2462	8.913	10

Per FCC KDB 447498 D01v05r02, the SAR exclusion threshold for distances < 50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)}*\sqrt{Frequency(GHz)} \leq 3.0$$

Based on the maximum conducted power of Bluetooth and the antenna to use separation distance, Bluetooth and WLAN SAR were not required;

$$[(0.726 \text{mW/5})^* \sqrt{2.480}] = 0.23 < 3.0$$
, and  $[(8.913 \text{mW/5})^* \sqrt{2.462}] = 2.80 < 3.0$ .

Note: When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

The End

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