



## RADIO TEST REPORT

**Test Report No. :27FE0008-HO-A-1**

**Applicant** : FUJITSU TEN Limited  
**Type of Equipment** : DISPLAY  
**Model No.** : BT016A  
**FCC ID** : BABBT016A  
**Test standard** : FCC Part 15 Subpart C  
Section 15.207, Section 15.247: 2007  
**Test Result** : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.

**Date of test:**

April 20 to May 8, 2007

**Tested by:**

Makoto Kosaka  
EMC Services

Hidekazu Tanaka  
EMC Services

**Approved by :**

Mitsuru Fujimura  
EMC Services



NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.

\*As for the range of Accreditation in NVLAP, you may refer to the WEB address,  
<http://uljapan.co.jp/emc/nvlap.htm>

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### **SECTION 3: Test specification, procedures & results**

#### **3.1 Test Specification**

Test Specification	:	FCC Part15 Subpart C : 2007
Title	:	FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits : 2007 Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz : 2007

#### **FCC 15.31 (e)**

The stable voltage (DC3.3V and 1.8V) is constantly supplied with RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

#### **FCC Part 15.203 Antenna requirement**

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

### 3.2 Procedures and results

Test Procedures and Results							
No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin*0)	Results
1	Conducted emission	FCC: ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC: Section 15.207	-	N/A	N/A *1)	N/A
		IC: RSS-Gen 7.2.2	IC: RSS-Gen 7.2.2				
2	Carrier Frequency Separation	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)	Conducted	N/A	See data.	Complied
		IC: -	IC: RSS-210 A8.1 (2)				
3	20dB Bandwidth	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (1)				
4	Number of Hopping Frequency	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (4)				
5	Dwell time	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (4)				
6	Maximum Peak Output Power	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(b)(1)	Conducted	N/A	Complied	
		IC: RSS-Gen 4.6	IC: RSS-210 A8.4 (2)				
7	Band Edge Compliance	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(d)	Conducted	N/A	Complied	
		IC: -	IC: RSS-210 A8.5				
8	Spurious Emission	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(d)	Conducted/ Radiated	N/A	[Tx] 8.7dB 24020.0MHz Hor/Ver, Low Ch. 24800.0MHz Hor, High Ch. [Rx] 6.2dB 2441.0MHz. Hor	Complied
IC: RSS-Gen 4.7 RSS-Gen 4.8	IC: RSS-210 A8.5 RSS-Gen 7.2.1 and 7.2.3						

Note: UL Japan, Inc.'s EMI Work Procedures No.QPM05 and QPM15.

\*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

\*1) The test is not applicable since EUT is not connected to AC line.

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\*These tests were also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".

\*These tests were performed without any deviations from test procedure except for additions or exclusions.

### 3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS-Gen 4.4.1	RSS-Gen 4.4.1	Conducted	N/A	N/A	N/A

### 3.4 Uncertainty

#### Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is  $\pm 4.59\text{dB}(3\text{m})$ .

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is  $\pm 4.62\text{dB}(3\text{m})$ .

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is  $\pm 5.27\text{dB}$ .

The data listed in this test report has enough margin, more than the site margin.

#### Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is  $\pm 3.0\text{dB}$ .

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### 3.5 Test Location

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	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	655103	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	IC4247A-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	IC4247A-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	-
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 semi-anechoic chamber	-	-	6.0 x 6.0 x 3.9m	N/A	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	2.0 x 2.0 m	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	4.75 x 5.4 m	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

\* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1, No.2, No.3, No.4, semi-anechoic chambers and No.3 and No.4 shielded rooms.

\* Our company name was changed from "UL Apex Co., Ltd." to "UL Japan, Inc." on April 26, 2007.

### 3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

## **SECTION 4: Operation of E.U.T. during testing**

### **4.1 Operating Modes**

The mode used for test : Transmitting mode(Packet size DH5, Data packet: PRBS9)

- Low Channel : 2402MHz
- Mid Channel : 2441MHz
- High Channel : 2480MHz

Receiving mode

- Mid Channel :2441MHz

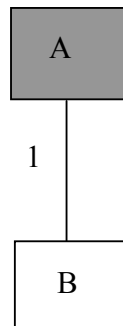
Inquiry mode

\*As a result of preliminary test, the formal test was performed with the above modes, which had the max power rate.

Remarks: Test was not performed at AFH mode, because the decrease of number of channel (min: 20ch) at AFH mode does not influence on the output power and bandwidth of the EUT.

However, the limit level 125mWof AFH mode was used for the test.

### **4.2 Configuration and peripherals**



\* Cabling and setup were taken into consideration and test data was taken under worse case conditions.

#### **Description of EUT and Support equipment**

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	DISPLAY	BT016A	1G000002 *1) 1G000018 *2)	FUJITSU TEN	EUT
B	Car Battery	40B19L	A030402	YUASA	-

\*1) Used for Radiated Emission test

\*2) Used for Antenna Terminal Conducted test

#### **List of cables used**

No.	Name	Length (m)	Shield (Cable)	Shield (Connector)
1	DC Cable	0.9	Unshielded	Unshielded

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## **SECTION 5: Spurious Emission**

### **[Conducted]**

#### **Test Procedure**

The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.

**Test data** : APPENDIX 2

**Test result** : Pass

### **[Radiated]**

#### **Test Procedure**

EUT was placed on a urethane platform of nominal size, 0.5m by 1m, raised 80cm above the conducting ground plane. The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz).

The height of the measuring varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

The result also satisfied with the general limits specified in section 15.209(a).

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector	QP: BW 120kHz	PK: RBW:1MHz/VBW: 1MHz
IF Bandwidth		AV: RBW:1MHz/VBW:10Hz

The test was made on EUT at the normal use position.

**Test data** : APPENDIX 2

**Test result** : Pass

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## **SECTION 6: Bandwidth**

### **Test Procedure**

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

Test data	: APPENDIX 2
Test result	: Pass

## **SECTION 7: Maximum Peak Output Power**

### **Test Procedure**

The Maximum Peak Output Power was measured with a power meter (tested bandwidth: 50MHz) connected to the antenna port.

It was measured based on "Power Output Option 1" of "Guidance on Measurement of Digital Transmission Systems Operating under Section15.247".

Test data	: APPENDIX 2
Test result	: Pass

## **SECTION 8: Carrier Frequency Separation**

### **Test Procedure**

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Test data	: APPENDIX 2
Test result	: Pass

## **SECTION 9: Number of Hopping Frequency**

### **Test Procedure**

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Test data	: APPENDIX 2
Test result	: Pass

## **SECTION 10: Dwell time**

### **Test Procedure**

The Dwell time was measured with a spectrum analyzer connected to the antenna port.

Test data	: APPENDIX 2
Test result	: Pass

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