
EMI TEST REPORT

Test Report No. : 24BE0020-HO-1

Applicant : **DENSO CORPORATION**

Type of Equipment : **Bluetooth ASSY**

Model No. : **BTA-01A**

Test standard : **FCC Part 15 Subpart C Section 15.247(c)**
Out of Band Emission
(Class 2 permissive change)

FCC ID : **HYQBTA01A**

Test Result : **Complied**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.
5. This test report does not constitute an endorsement by NIST/NVLAP or U.S. Government.

Date of test : October 7, 8, and 9, 2003

Tested by : 

Naoki Sakamoto
Leader of EMC Head Office Division

Approved by : 

Hironobu Shimoji
Group Leader of EMC Head Office Division

UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

CONTENTS

	PAGE
SECTION 1: Client information	3
SECTION 2: Equipment under test (E.U.T.)	3
SECTION 3: Test specification, procedures and results	5
SECTION 4: Operation of E.U.T. during testing	6
SECTION 5: Out of Band emission15.247(c)	7
APPENDIX 1: Photographs of test setup	8
APPENDIX 2: Test instruments	8
APPENDIX 3: Data of EMI test	8

UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

SECTION 1: Client information

Company Name : DENSO CORPORATION
Brand Name : DENSO
Address : 1-1 Showa-cho, Kariya-shi, Aichi-ken, 448-8661 Japan
Telephone Number : +81-566-61-3511
Facsimile Number : +81-566-25-4941
Contact Person : Satoshi Nakamura

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : Bluetooth ASSY
Model No. : BTA-01A
Serial No. : N/A
Rating : DC3.3V DC5V
Country of Manufacture : Japan
Receipt Date of Sample : October 3, 2003
Condition of EUT : Production prototype

UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

2.2 Product Description

Model: BTA-01A which was referred to as the EUT in this report is a Bluetooth ASSY.

This product is installed in Display in a Navigation system. And this product is used for a Hands free system. Instead of having connected using the cable, a Navigation system is connected with a cellular phone on radio by using this product.

The specification is as following;

Equipment Type	: Transceiver
Clock frequency used in EUT	: 13MHz
Frequency characteristics	: from 2402MHz to 2480MHz
Type of modulation	: GFSK
Bandwidth & Channel spacing	: 78MHz, 1MHz
Emission Designation (ITU Code)	: F1D
Antenna Type	: Lambda / 4 Uni-pole
Antenna Connector type	: MM8430-2600B
Antenna gain	: 1.0dBi (Max)
Method of Frequency Generation	: Crystal / Synthesizer
Power Supply	: DC3.3V
Operating voltage	: DC3.1-3.5V
Duty cycle	: 0.78
Operating temperature	: -30deg.C. to+85deg.C.

UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

SECTION 3: Test specification, procedures and results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C and Section15.247
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz,
5725-5850MHz

3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	OUT of Band Emission	ANSI C63.4:2001	Section15.247(c)	Radiated	N/A	1.0dB 4803.9MHz 4960.0MHz 4960.0MHz	Complied

Remarks:

This test report is based on the modification for BTA-01A(FCC ID : HYQBTA01A), Class 2 permissive change.
The main contents is the partial change in the antenna-alignment circuit.
As for the details, see the modified reference that had been submitted.
The Out of Band Emission item as the additional measurement, which may occur the electromagnetic effects by this modification was performed in this report.

3.3 Confirmation

UL Apex Co., Ltd. hereby confirms that E.U.T. , in the configuration tested, complies with the specifications FCC Part15 Subpart C Section 15.247(c).

3.4 Uncertainty

Spurious Emission(Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ± 4.5 dB.
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ± 5.2 dB.
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ± 6.6 dB.
The data listed in this test report may exceed the test limit because it does not have enough margin.

3.5 Test Location

UL Apex Co., Ltd. EMC Head Office Division.
No.2 semi anechoic chamber, 7.5 x 5.8 x 5.2m.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124
This site has been fully described in a report submitted to FCC office, and listed on June 05, 2002 (Registration number: 846015).
*NVLAP Lab. code: 200572-0
Industry Canada: IC4247-2

3.6 Test setup, Data of EMI and Test instruments

Refer to APPENDIX 1 to 3.

UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

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

4.1 Operating Modes

The EUT exercise program used during radiated testing was designed to exercise the various system components in a manner similar to typical use.

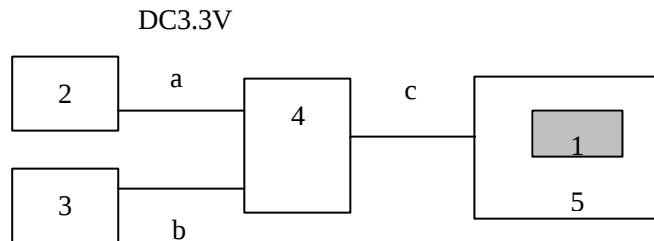
The operating mode/system was as follows:

Operation mode : Transmitting

1. Transmitting mode(Low 2402 MHz)
2. Transmitting mode(Mid 2441 MHz)
3. Transmitting mode(High 2480MHz)
- *Packet : DH5

Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals



* Cabling was taken into consideration and test data was taken under worst case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
1	Bluetooth ASSY	BTA-01A	N/A	DENSO CORPORATION	EUT
2	12V Car Battery	-	-	-	-
3	PC	P2401	00-N-3	HP	-
4	JIGU	N/A	N/A	DENSO CORPORATION	-
5	Switch Board	N/A	N/A	DENSO CORPORATION	DoC

List of cables used

No.	Name	Length (m)	Shield	Backshell Material
a	DC Power Cable	2.0	N	Polyvinyl chloride
b	RS-232C Cable	2.0	Y	Polyvinyl chloride
c	Signal Cable	1.0	Y	Polyvinyl chloride

UL Apex Co., Ltd. EMC Head Office Division

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

SECTION 5: Out of Band Emission , Section 15.247(c) [Radiated:30MHz to 25GHz]

Test Procedure

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.

The Radiated Electric Field Strength intensity has been measured in No.2 semi anechoic chamber (7.5x5.8x5.2m) with a ground plane and at distance of 3m(Below 10GHz) or 1m(Upper 10GHz).

The measuring antenna height was varied between 1 to 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.

The EUT noise was measured at each position of all three axes X, Y, Z to compare the level, and the maximum noise level was recorded.

Test data : **APPENDIX 3**
Test result : **Pass**

UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

APPENDIX 1: Photographs of test setup

Page 9 : OUT of Band Emission (Radiated)

APPENDIX 2: Test instruments

Page 12 : Test instruments

APPENDIX 3: Data of EMI test

Page 13-15 : 30MHz to 1000MHz

Page 16-24 : 1GHz to 25GHz

UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

APPENDIX 1: Photographs of test setup

OUT of Band Emission (Radiated)



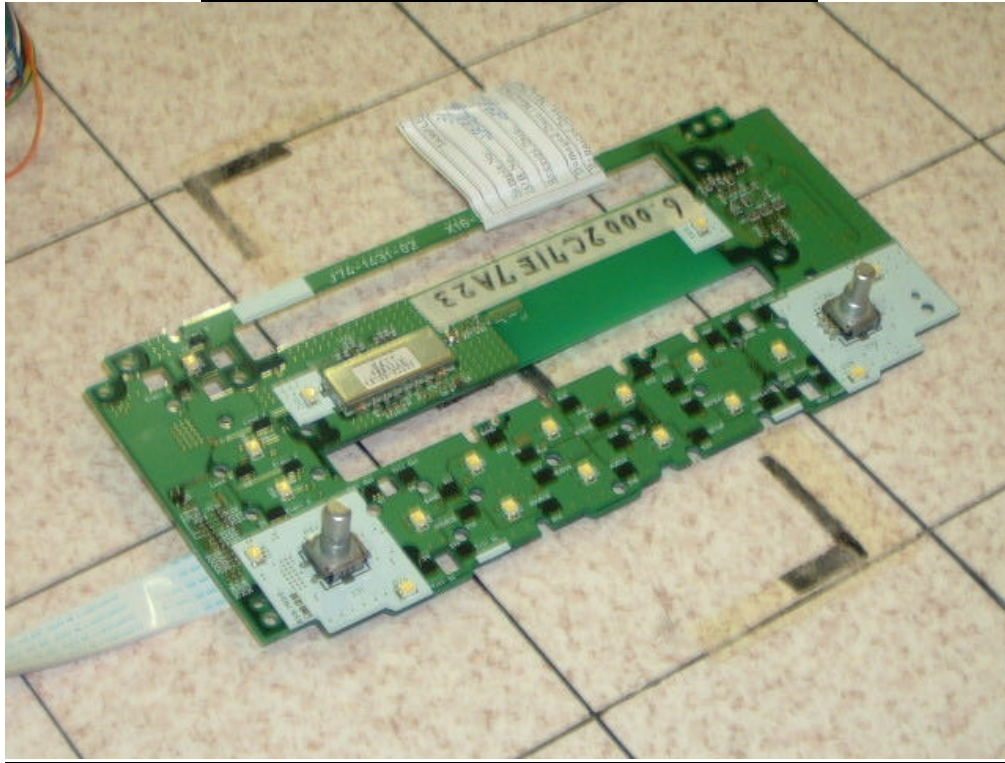
UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

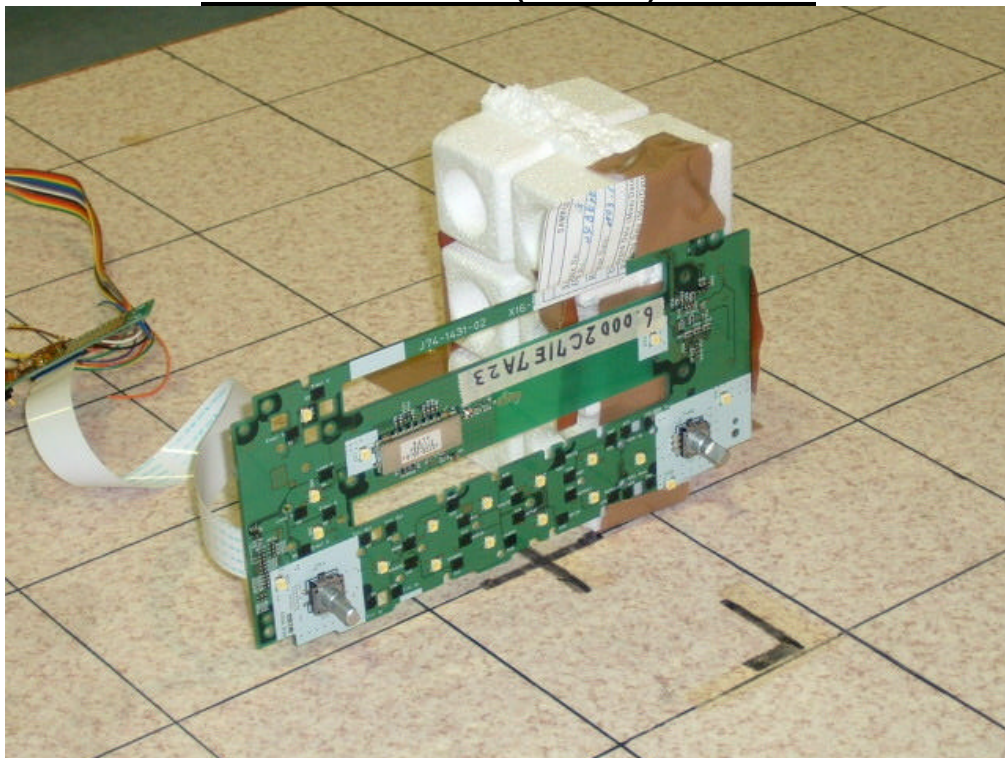
Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

OUT of Band Emission (Radiated) X axis



OUT of Band Emission (Radiated) Y axis



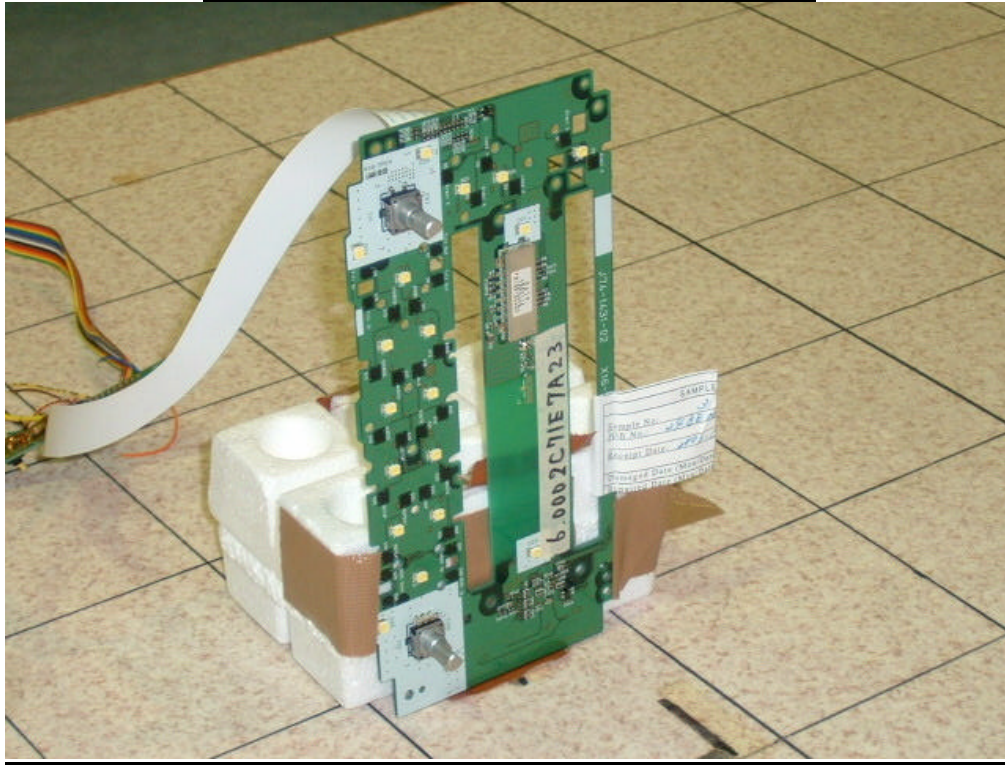
UL Apex Co., Ltd. EMC Head Office Division.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

OUT of Band Emission (Radiated) Z axis



UL Apex Co., Ltd. EMC Head Office Division

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8116 Facsimile: +81 596 24 8124

MF058a(10.04.03)

Test Report No 24BE0020-HO-1

APPENDIX 2

Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2003/04/11 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2003/04/28 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2003/04/28 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE	2003/01/31 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2002/12/24 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2003/03/13 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2003/01/11 * 12
MCC-04	Microwave Cable	Storm	421-011	RE	2003/01/14 * 12
MCC-24	Microwave Cable	Storm	-	RE	2003/04/30 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2003/02/08 * 12
MHA-01	Horn Antenna	EMCO	3160-09	RE	2003/01/11 * 12
MHF-02	High Pass Filte	Tokimec	TF323DCA	RE	2003/ 09/19 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item :

CE: Conducted emission,

RE: Radiated emission,

H/F: Harmonics and voltage fluctuation

RFI: RFI Power test,

AT: Antenna terminal disturbance voltage

DATA OF SPURIOUS EMISSIONS(30MHz to 1GHz)

UL Apex Co., Ltd.

P13

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m
S/ N	:	DATE	: 2003/10/07
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 54%
POWER	: DC3.3V		
MODE	: Tx 2402MHz (X axis)	Engineer :	Naoki Sakamoto

QP DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Atten [dB]	RESULT		Limit QP [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]						[dBuV/m]			[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	87.7	26.5	25.3	6.4	23.4	1.1	6.0	16.6	15.4	40.0	23.4	24.6
2	248.9	21.9	24.5	17.0	23.3	2.1	6.0	23.7	26.3	46.0	22.3	19.7
3	466.5	19.7	22.1	17.9	23.0	2.9	6.2	23.7	26.1	46.0	22.3	19.9
4	547.6	21.6	21.0	18.9	23.2	3.4	6.1	26.8	26.2	46.0	19.2	19.8
5	751.9	20.4	20.1	21.1	23.2	3.9	6.1	28.3	28.0	46.0	17.7	18.0

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(30MHz to 1GHz)

UL Apex Co., Ltd.

P14

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m
S/ N	:	DATE	: 2003/10/07
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 54%
POWER	: DC3.3V		
MODE	: Tx 2441MHz (X axis)	Engineer :	Naoki Sakamoto

QP DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Atten [dB]	RESULT		Limit QP [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]						[dBuV/m]			[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	87.7	27.0	25.1	6.4	23.4	1.1	6.0	17.1	15.2	40.0	22.9	24.8
2	248.9	22.3	24.2	17.0	23.3	2.1	6.0	24.1	26.0	46.0	21.9	20.0
3	466.5	20.0	22.9	17.9	23.0	2.9	6.2	24.0	26.9	46.0	22.0	19.1
4	547.6	21.4	21.4	18.9	23.2	3.4	6.1	26.6	26.6	46.0	19.4	19.4
5	751.9	20.1	20.3	21.1	23.2	3.9	6.1	28.0	28.2	46.0	18.0	17.8

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(30MHz to 1GHz)

UL Apex Co., Ltd.

P15

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m
S/ N	:	DATE	: 2003/10/07
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 54%
POWER	: DC3.3V		
MODE	: Tx 2480MHz (X axis)	Enginee :	Naoki Sakamoto

QP DETECT

Q1 DEFECT												
No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Atten [dB]	RESULT		Limit QP [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	87.7	26.6	25.0	6.4	23.4	1.1	6.0	16.7	15.1	40.0	23.3	24.9
2	248.9	23.0	24.1	17.0	23.3	2.1	6.0	24.8	25.9	46.0	21.2	20.1
3	466.5	21.0	23.0	17.9	23.0	2.9	6.2	25.0	27.0	46.0	21.0	19.0
4	547.6	21.3	21.1	18.9	23.2	3.4	6.1	26.5	26.3	46.0	19.5	19.7
5	751.9	20.2	20.4	21.1	23.2	3.9	6.1	28.1	28.3	46.0	17.9	17.7

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P16

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N	:	DATE	: 2003/10/09
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 45%
POWER	: DC3.3V		
MODE	: Tx 2402MHz (X axis)	Engineer :	Naoki Sakamoto

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2390.0	41.1	41.5	30.7	36.9	6.3	0.0	41.2	41.6	74.0	32.8	32.4
2	4803.7	43.4	49.6	35.1	36.8	11.6	1.0	54.3	60.5	74.0	19.7	13.5
3	7206.0	42.3	43.0	37.5	36.5	10.7	0.5	54.5	55.2	74.0	19.5	18.8
4	9608.0	43.3	43.1	37.4	37.2	12.7	0.5	56.7	56.5	74.0	17.3	17.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12010.0	43.5	44.3	40.5	36.8	14.2	0.6	52.5	53.3	74.0	21.5	20.7
6	14412.0	43.2	43.2	42.8	35.3	15.8	0.6	57.6	57.6	74.0	16.4	16.4
7	16814.0	43.2	43.1	45.2	36.5	17.6	0.4	60.4	60.3	74.0	13.6	13.7
8	19216.0	43.3	42.9	41.0	35.8	18.9	0.6	58.5	58.1	74.0	15.5	15.9
9	21618.0	43.9	43.5	40.9	36.8	19.5	1.1	59.1	58.7	74.0	14.9	15.3
10	24020.0	43.7	43.6	40.3	36.4	20.8	1.4	60.3	60.2	74.0	13.7	13.8

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2390.0	29.8	29.8	30.7	36.9	6.3	0.0	29.9	29.9	54.0	24.1	24.1
2	4803.9	33.0	42.1	35.1	36.8	11.6	1.0	43.9	53.0	54.0	10.1	1.0
3	7206.0	30.1	30.3	37.5	36.5	10.7	0.5	42.3	42.5	54.0	11.7	11.5
4	9608.0	30.5	30.5	37.4	37.2	12.7	0.5	43.9	43.9	54.0	10.1	10.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12010.0	30.7	31.2	40.5	36.8	14.2	0.6	39.7	40.2	54.0	14.3	13.8
6	14412.0	30.3	30.3	42.8	35.3	15.8	0.6	44.7	44.7	54.0	9.3	9.3
7	16814.0	30.5	30.7	45.2	36.5	17.6	0.4	47.7	47.9	54.0	6.3	6.1
8	19216.0	30.8	31.0	41.0	35.8	18.9	0.6	46.0	46.2	54.0	8.0	7.8
9	21618.0	31.3	32.0	40.9	36.8	19.5	1.1	46.5	47.2	54.0	7.5	6.8
10	24020.0	31.4	31.3	40.3	36.4	20.8	1.4	48.0	47.9	54.0	6.0	6.1

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0)$ =

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P17

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N	:	DATE	: 2003/10/09
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 45%
POWER	: DC3.3V		
MODE	: Tx 2441MHz (X axis)	Engineer :	Naoki Sakamoto

PK DETECT

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dB]	[dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	4882.0	43.5	47.0	35.5	36.8	11.7	1.0	54.9	58.4	74.0	19.1	15.6
2	7323.0	43.1	43.2	37.8	36.6	10.8	0.5	55.6	55.7	74.0	18.4	18.3
3	9764.0	42.8	42.7	37.0	37.2	12.8	0.6	56.0	55.9	74.0	18.0	18.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
4	12205.0	43.1	43.4	41.2	36.7	14.4	0.6	53.1	53.4	74.0	20.9	20.6
5	14646.0	43.2	43.1	43.1	35.5	16.0	0.6	57.9	57.8	74.0	16.1	16.2
6	17087.0	43.3	42.5	45.5	36.2	17.8	0.4	61.3	60.5	74.0	12.7	13.5
7	19528.0	42.9	43.2	40.6	36.0	19.0	1.0	58.0	58.3	74.0	16.0	15.7
8	21969.0	45.0	45.0	40.9	36.0	19.6	1.0	61.0	61.0	74.0	13.0	13.0
9	24410.0	44.1	44.2	40.5	36.9	21.0	2.5	61.7	61.8	74.0	12.3	12.2

AV DETECT

AV DETECT

No.	FREQ [MHz]	T/R READING HOR VER [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT HOR VER [dBuV/m]		Limit AV [dBuV/m]	MARGIN HOR VER [dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	4882.0	33.3	39.5	35.5	36.8	11.7	1.0	44.7	50.9	54.0	9.3	3.1
2	7323.0	31.0	30.5	37.8	36.6	10.8	0.5	43.5	43.0	54.0	10.5	11.0
3	9764.0	31.2	30.8	37.0	37.2	12.8	0.6	44.4	44.0	54.0	9.6	10.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
4	12205.0	31.0	31.0	41.2	36.7	14.4	0.6	41.0	41.0	54.0	13.0	13.0
5	14646.0	30.5	30.1	43.1	35.5	16.0	0.6	45.2	44.8	54.0	8.8	9.2
6	17087.0	30.0	30.3	45.5	36.2	17.8	0.4	48.0	48.3	54.0	6.0	5.7
7	19528.0	30.1	30.9	40.6	36.0	19.0	1.0	45.2	46.0	54.0	8.8	8.0
8	21969.0	32.0	32.0	40.9	36.0	19.6	1.0	48.0	48.0	54.0	6.0	6.0
9	24410.0	31.0	31.5	40.5	36.9	21.0	2.5	48.6	49.1	54.0	5.4	4.9

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) =$

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P18

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY : DENSO CORPORATION	REPORT NO : 24BE0020-HO-1
EQUIPMENT : Bluetooth ASSY	REGULATION : Fcc Part15 Subpart C 15.247(c)
MODEL : BTA-01A	TEST DISTANCE : 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N :	DATE : 2003/10/09
FCC ID : HYQBTA01A	TEMPERATURE : 23
IC Number : 1551A-BTA01A	HUMIDITY : 45%
POWER : DC3.3V	
MODE : Tx 2480MHz (X axis)	Engineer : Naoki Sakamoto

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2483.5	42.6	41.9	30.7	36.9	6.3	0.0	42.7	42.0	74.0	31.3	32.0
2	4960.0	43.0	49.9	36.0	36.8	11.8	1.0	55.0	60.9	74.0	19.0	13.1
3	7440.0	43.5	43.5	38.1	36.7	10.9	0.5	56.3	55.8	74.0	17.7	18.2
4	9920.0	43.8	43.7	36.5	37.3	13.0	0.6	56.6	55.9	74.0	17.4	18.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12400.0	43.2	43.0	41.8	36.6	14.5	0.4	53.8	53.6	74.0	20.2	20.4
6	14880.0	43.1	43.2	43.3	35.7	16.1	0.6	57.9	58.0	74.0	16.1	16.0
7	17360.0	43.5	43.2	45.4	36.2	18.0	0.3	61.5	61.2	74.0	12.5	12.8
8	19840.0	43.3	43.6	41.0	36.1	19.1	1.1	58.9	59.2	74.0	15.1	14.8
9	22320.0	44.4	45.1	40.8	35.5	19.8	1.0	61.0	61.7	74.0	13.0	12.3
10	24800.0	44.1	44.2	40.6	36.7	21.1	2.9	62.5	62.6	74.0	11.5	11.4

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2483.5	30.9	30.8	30.7	36.9	6.3	0.0	31.0	30.9	54.0	23.0	23.1
2	4960.0	33.3	40.2	36.0	36.8	11.8	1.0	45.3	52.2	54.0	8.7	1.8
3	7440.0	30.5	30.6	38.1	36.7	10.9	0.5	43.3	43.4	54.0	10.7	10.6
4	9920.0	30.5	30.2	36.5	37.3	13.0	0.6	43.3	43.0	54.0	10.7	11.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12400.0	31.0	31.0	41.8	36.6	14.5	0.4	41.6	41.6	54.0	12.4	12.4
6	14880.0	31.0	30.7	43.3	35.7	16.1	0.6	45.8	45.5	54.0	8.2	8.5
7	17360.0	30.3	30.2	45.4	36.2	18.0	0.3	48.3	48.2	54.0	5.7	5.8
8	19840.0	30.7	30.5	41.0	36.1	19.1	1.1	46.3	46.1	54.0	7.7	7.9
9	22320.0	32.5	32.1	40.8	35.5	19.8	1.0	49.1	48.7	54.0	4.9	5.3
10	24800.0	32.0	32.0	40.6	36.7	21.1	2.9	50.4	50.4	54.0	3.6	3.6

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) =$

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P19

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N	:	DATE	: 2003/10/09
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 45%
POWER	: DC3.3V		
MODE	: Tx 2402MHz (Y axis)	Engineer :	Naoki Sakamoto

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2390.0	41.0	41.9	30.7	36.9	6.3	0.0	41.1	42.0	74.0	32.9	32.0
2	4803.7	48.5	47.5	35.1	36.8	11.6	1.0	59.4	58.4	74.0	14.6	15.6
3	7206.0	42.8	43.2	37.5	36.5	10.7	0.5	55.0	55.4	74.0	19.0	18.6
4	9608.0	43.1	43.0	37.4	37.2	12.7	0.5	56.5	56.4	74.0	17.5	17.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12010.0	43.8	43.9	40.5	36.8	14.2	0.6	52.8	52.9	74.0	21.2	21.1
6	14412.0	43.3	43.0	42.8	35.3	15.8	0.6	57.7	57.4	74.0	16.3	16.6
7	16814.0	43.2	43.1	45.2	36.5	17.6	0.4	60.4	60.3	74.0	13.6	13.7
8	19216.0	43.5	43.3	41.0	35.8	18.9	0.6	58.7	58.5	74.0	15.3	15.5
9	21618.0	43.7	44.2	40.9	36.8	19.5	1.1	58.9	59.4	74.0	15.1	14.6
10	24020.0	44.1	44.0	40.3	36.4	20.8	1.4	60.7	60.6	74.0	13.3	13.4

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2390.0	29.5	29.4	30.7	36.9	6.3	0.0	29.6	29.5	54.0	24.4	24.5
2	4803.9	41.4	40.1	35.1	36.8	11.6	1.0	52.3	51.0	54.0	1.7	3.0
3	7206.0	30.1	30.0	37.5	36.5	10.7	0.5	42.3	42.2	54.0	11.7	11.8
4	9608.0	30.5	30.5	37.4	37.2	12.7	0.5	43.9	43.9	54.0	10.1	10.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12010.0	31.0	31.0	40.5	36.8	14.2	0.6	40.0	40.0	54.0	14.0	14.0
6	14412.0	30.1	30.2	42.8	35.3	15.8	0.6	44.5	44.6	54.0	9.5	9.4
7	16814.0	30.6	30.8	45.2	36.5	17.6	0.4	47.8	48.0	54.0	6.2	6.0
8	19216.0	30.8	30.7	41.0	35.8	18.9	0.6	46.0	45.9	54.0	8.0	8.1
9	21618.0	30.9	31.3	40.9	36.8	19.5	1.1	46.1	46.5	54.0	7.9	7.5
10	24020.0	30.7	31.7	40.3	36.4	20.8	1.4	47.3	48.3	54.0	6.7	5.7

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0)$ =

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P20

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N	:	DATE	: 2003/10/09
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 45%
POWER	: DC3.3V		
MODE	: Tx 2441MHz (Y axis)	Engineer :	Naoki Sakamoto

PK DETECT

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	4882.0	47.0	49.9	35.5	36.8	11.7	1.0	58.4	61.3	74.0	15.6	12.7
2	7323.0	43.3	43.5	37.8	36.6	10.8	0.5	55.8	56.0	74.0	18.2	18.0
3	9764.0	42.9	43.6	37.0	37.2	12.8	0.6	56.1	56.8	74.0	17.9	17.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
4	12205.0	43.2	43.1	41.2	36.7	14.4	0.6	53.2	53.1	74.0	20.8	20.9
5	14646.0	42.9	43.0	43.1	35.5	16.0	0.6	57.6	57.7	74.0	16.4	16.3
6	17087.0	43.0	42.6	45.5	36.2	17.8	0.4	61.0	60.6	74.0	13.0	13.4
7	19528.0	43.1	42.9	40.6	36.0	19.0	1.0	58.2	58.0	74.0	15.8	16.0
8	21969.0	44.8	45.1	40.9	36.0	19.6	1.0	60.8	61.1	74.0	13.2	12.9
9	24410.0	44.1	43.6	40.5	36.9	21.0	2.5	61.7	61.2	74.0	12.3	12.8

AV DETECT

AV DETECT												
No.	FREQ	T/R READING		ANT	AMP	CABLE	High-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]		[dBuV/m]	[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	4882.0	39.0	41.1	35.5	36.8	11.7	1.0	50.4	52.5	54.0	3.6	1.5
2	7323.0	30.1	30.2	37.8	36.6	10.8	0.5	42.6	42.7	54.0	11.4	11.3
3	9764.0	30.4	30.5	37.0	37.2	12.8	0.6	43.6	43.7	54.0	10.4	10.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
4	12205.0	30.5	30.6	41.2	36.7	14.4	0.6	40.5	40.6	54.0	13.5	13.4
5	14646.0	30.7	30.6	43.1	35.5	16.0	0.6	45.4	45.3	54.0	8.6	8.7
6	17087.0	30.0	30.1	45.5	36.2	17.8	0.4	48.0	48.1	54.0	6.0	5.9
7	19528.0	30.1	30.1	40.6	36.0	19.0	1.0	45.2	45.2	54.0	8.8	8.8
8	21969.0	31.9	32.2	40.9	36.0	19.6	1.0	47.9	48.2	54.0	6.1	5.8
9	24410.0	31.6	31.0	40.5	36.9	21.0	2.5	49.2	48.6	54.0	4.8	5.4

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) =$

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P21

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY : DENSO CORPORATION	REPORT NO : 24BE0020-HO-1	
EQUIPMENT : Bluetooth ASSY	REGULATION : Fcc Part15 Subpart C 15.247(c)	
MODEL : BTA-01A	TEST DISTANCE : 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)	
S/ N :	DATE : 2003/10/09	
FCC ID : HYQBTA01A	TEMPERATURE : 23	
IC Number : 1551A-BTA01A	HUMIDITY : 45%	
POWER : DC3.3V		
MODE : Tx 2480MHz (Y axis)	Engineer : Naoki Sakamoto	

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2483.5	45.0	42.8	30.7	36.9	6.3	0.0	45.1	42.9	74.0	28.9	31.1
2	4960.0	48.4	49.0	36.0	36.8	11.8	1.0	60.4	60.0	74.0	13.6	14.0
3	7440.0	43.4	43.3	38.1	36.7	10.9	0.5	56.2	55.6	74.0	17.8	18.4
4	9920.0	43.2	43.9	36.5	37.3	13.0	0.6	56.0	56.1	74.0	18.0	17.9
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12400.0	42.9	42.9	41.8	36.6	14.5	0.4	53.5	53.5	74.0	20.5	20.5
6	14880.0	43.1	43.3	43.3	35.7	16.1	0.6	57.9	58.1	74.0	16.1	15.9
7	17360.0	43.2	43.1	45.4	36.2	18.0	0.3	61.2	61.1	74.0	12.8	12.9
8	19840.0	43.3	43.3	41.0	36.1	19.1	1.1	58.9	58.9	74.0	15.1	15.1
9	22320.0	44.4	45.4	40.8	35.5	19.8	1.0	61.0	62.0	74.0	13.0	12.0
10	24800.0	44.2	44.2	40.6	36.7	21.1	2.9	62.6	62.6	74.0	11.4	11.4

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2483.5	31.3	30.0	30.7	36.9	6.3	0.0	31.4	30.1	54.0	22.6	23.9
2	4960.0	39.6	41.0	36.0	36.8	11.8	1.0	51.6	53.0	54.0	2.4	1.0
3	7440.0	30.6	30.5	38.1	36.7	10.9	0.5	43.4	43.3	54.0	10.6	10.7
4	9920.0	30.5	30.5	36.5	37.3	13.0	0.6	43.3	43.3	54.0	10.7	10.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12400.0	31.0	31.0	41.8	36.6	14.5	0.4	41.6	41.6	54.0	12.4	12.4
6	14880.0	30.7	30.4	43.3	35.7	16.1	0.6	45.5	45.2	54.0	8.5	8.8
7	17360.0	30.0	30.3	45.4	36.2	18.0	0.3	48.0	48.3	54.0	6.0	5.7
8	19840.0	31.2	30.0	41.0	36.1	19.1	1.1	46.8	45.6	54.0	7.2	8.4
9	22320.0	32.0	31.9	40.8	35.5	19.8	1.0	48.6	48.5	54.0	5.4	5.5
10	24800.0	31.0	31.1	40.6	36.7	21.1	2.9	49.4	49.5	54.0	4.6	4.5

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) =$

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P22

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N	:	DATE	: 2003/10/09
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 45%
POWER	: DC3.3V		
MODE	: Tx 2402MHz (Z axis)	Engineer :	Naoki Sakamoto

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2390.0	42.8	42.9	30.7	36.9	6.3	0.0	42.9	43.0	74.0	31.1	31.0
2	4803.7	49.5	45.5	35.1	36.8	11.6	1.0	60.4	56.4	74.0	13.6	17.6
3	7206.0	43.0	43.1	37.5	36.5	10.7	0.5	55.2	55.3	74.0	18.8	18.7
4	9608.0	43.1	42.8	37.4	37.2	12.7	0.5	56.5	56.2	74.0	17.5	17.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12010.0	43.6	43.7	40.5	36.8	14.2	0.6	52.6	52.7	74.0	21.4	21.3
6	14412.0	44.0	43.2	42.8	35.3	15.8	0.6	58.4	57.6	74.0	15.6	16.4
7	16814.0	43.5	42.9	45.2	36.5	17.6	0.4	60.7	60.1	74.0	13.3	13.9
8	19216.0	43.6	43.0	41.0	35.8	18.9	0.6	58.8	58.2	74.0	15.2	15.8
9	21618.0	43.8	43.8	40.9	36.8	19.5	1.1	59.0	59.0	74.0	15.0	15.0
10	24020.0	43.7	43.9	40.3	36.4	20.8	1.4	60.3	60.5	74.0	13.7	13.5

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2390.0	29.4	29.4	30.7	36.9	6.3	0.0	29.5	29.5	54.0	24.5	24.5
2	4803.9	42.0	35.8	35.1	36.8	11.6	1.0	52.9	46.7	54.0	1.1	7.3
3	7206.0	30.1	30.2	37.5	36.5	10.7	0.5	42.3	42.4	54.0	11.7	11.6
4	9608.0	30.5	30.3	37.4	37.2	12.7	0.5	43.9	43.7	54.0	10.1	10.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12010.0	30.7	31.0	40.5	36.8	14.2	0.6	39.7	40.0	54.0	14.3	14.0
6	14412.0	30.3	30.5	42.8	35.3	15.8	0.6	44.7	44.9	54.0	9.3	9.1
7	16814.0	30.4	30.3	45.2	36.5	17.6	0.4	47.6	47.5	54.0	6.4	6.5
8	19216.0	30.1	30.1	41.0	35.8	18.9	0.6	45.3	45.3	54.0	8.7	8.7
9	21618.0	30.6	31.0	40.9	36.8	19.5	1.1	45.8	46.2	54.0	8.2	7.8
10	24020.0	31.1	31.2	40.3	36.4	20.8	1.4	47.7	47.8	54.0	6.3	6.2

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0)$ =

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P23

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY	: DENSO CORPORATION	REPORT NO	: 24BE0020-HO-1
EQUIPMENT	: Bluetooth ASSY	REGULATION	: Fcc Part15 Subpart C 15.247(c)
MODEL	: BTA-01A	TEST DISTANCE	: 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N	:	DATE	: 2003/10/09
FCC ID	: HYQBTA01A	TEMPERATURE	: 23
IC Number	: 1551A-BTA01A	HUMIDITY	: 45%
POWER	: DC3.3V		
MODE	: Tx 2441MHz (Z axis)	Engineer :	Naoki Sakamoto

PK DETECT

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	4882.0	49.8	44.0	35.5	36.8	11.7	1.0	61.2	55.4	74.0	12.8	18.6
2	7323.0	43.2	43.2	37.8	36.6	10.8	0.5	55.7	55.7	74.0	18.3	18.3
3	9764.0	43.3	43.2	37.0	37.2	12.8	0.6	56.5	56.4	74.0	17.5	17.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
4	12205.0	43.1	43.3	41.2	36.7	14.4	0.6	53.1	53.3	74.0	20.9	20.7
5	14646.0	43.0	43.2	43.1	35.5	16.0	0.6	57.7	57.9	74.0	16.3	16.1
6	17087.0	43.4	43.2	45.5	36.2	17.8	0.4	61.4	61.2	74.0	12.6	12.8
7	19528.0	43.3	43.0	40.6	36.0	19.0	1.0	58.4	58.1	74.0	15.6	15.9
8	21969.0	44.4	45.1	40.9	36.0	19.6	1.0	60.4	61.1	74.0	13.6	12.9
9	24410.0	44.2	44.3	40.5	36.9	21.0	2.5	61.8	61.9	74.0	12.2	12.1

AV DETECT

AV DETECT												
No.	FREQ	T/R READING		ANT	AMP	CABLE	High-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV/m]		[dB/m]	[dB]	[dB]	[dB]		[dBuV/m]	[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	4882.0	41.4	34.0	35.5	36.8	11.7	1.0	52.8	45.4	54.0	1.2	8.6
2	7323.0	30.4	30.5	37.8	36.6	10.8	0.5	42.9	43.0	54.0	11.1	11.0
3	9764.0	30.5	30.6	37.0	37.2	12.8	0.6	43.7	43.8	54.0	10.3	10.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
4	12205.0	30.3	31.2	41.2	36.7	14.4	0.6	40.3	41.2	54.0	13.7	12.8
5	14646.0	30.2	30.5	43.1	35.5	16.0	0.6	44.9	45.2	54.0	9.1	8.8
6	17087.0	30.1	30.0	45.5	36.2	17.8	0.4	48.1	48.0	54.0	5.9	6.0
7	19528.0	30.0	30.1	40.6	36.0	19.0	1.0	45.1	45.2	54.0	8.9	8.8
8	21969.0	32.0	32.2	40.9	36.0	19.6	1.0	48.0	48.2	54.0	6.0	5.8
9	24410.0	31.0	31.1	40.5	36.9	21.0	2.5	48.6	48.7	54.0	5.4	5.3

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) =$

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

DATA OF SPURIOUS EMISSIONS(1GHz to 25GHz)

UL Apex Co., Ltd.

P24

EMC HEAD OFFICE DIVISON No.2 SEMI ANECHOIC CHAMBER

COMPANY : DENSO CORPORATION	REPORT NO : 24BE0020-HO-1
EQUIPMENT : Bluetooth ASSY	REGULATION : Fcc Part15 Subpart C 15.247(c)
MODEL : BTA-01A	TEST DISTANCE : 3m(1 to 3.5GHz) and 1 m(3.5 to 25GHz)
S/ N :	DATE : 2003/10/09
FCC ID : HYQBTA01A	TEMPERATURE : 23
IC Number : 1551A-BTA01A	HUMIDITY : 45%
POWER : DC3.3V	
MODE : Tx 2480MHz (Z axis)	Engineer : Naoki Sakamoto

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2483.5	42.5	42.3	30.7	36.9	6.3	0.0	42.6	42.4	74.0	31.4	31.6
2	4960.0	49.0	45.4	36.0	36.8	11.8	1.0	61.0	56.4	74.0	13.0	17.6
3	7440.0	43.5	44.0	38.1	36.7	10.9	0.5	56.3	56.3	74.0	17.7	17.7
4	9920.0	43.3	43.2	36.5	37.3	13.0	0.6	56.1	55.4	74.0	17.9	18.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12400.0	43.2	43.3	41.8	36.6	14.5	0.4	53.8	53.9	74.0	20.2	20.1
6	14880.0	43.3	43.3	43.3	35.7	16.1	0.6	58.1	58.1	74.0	15.9	15.9
7	17360.0	43.1	43.1	45.4	36.2	18.0	0.3	61.1	61.1	74.0	12.9	12.9
8	19840.0	43.1	43.3	41.0	36.1	19.1	1.1	58.7	58.9	74.0	15.3	15.1
9	22320.0	44.7	45.2	40.8	35.5	19.8	1.0	61.3	61.8	74.0	12.7	12.2
10	24800.0	44.0	44.1	40.6	36.7	21.1	2.9	62.4	62.5	74.0	11.6	11.5

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	High-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass.												
1	2483.5	30.1	30.2	30.7	36.9	6.3	0.0	30.2	30.3	54.0	23.8	23.7
2	4960.0	41.0	37.6	36.0	36.8	11.8	1.0	53.0	49.6	54.0	1.0	4.4
3	7440.0	30.6	30.6	38.1	36.7	10.9	0.5	43.4	43.4	54.0	10.6	10.6
4	9920.0	30.5	30.6	36.5	37.3	13.0	0.6	43.3	43.4	54.0	10.7	10.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + High Pass - Dfac												
5	12400.0	31.0	31.0	41.8	36.6	14.5	0.4	41.6	41.6	54.0	12.4	12.4
6	14880.0	30.8	30.8	43.3	35.7	16.1	0.6	45.6	45.6	54.0	8.4	8.4
7	17360.0	30.1	29.8	45.4	36.2	18.0	0.3	48.1	47.8	54.0	5.9	6.2
8	19840.0	30.6	30.0	41.0	36.1	19.1	1.1	46.2	45.6	54.0	7.8	8.4
9	22320.0	32.4	32.0	40.8	35.5	19.8	1.0	49.0	48.6	54.0	5.0	5.4
10	24800.0	32.0	32.1	40.6	36.7	21.1	2.9	50.4	50.5	54.0	3.6	3.5

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) =$

9.5 dB

High Pass Filter : 3.5GHz to 25GHz(3.5GHz Pass)

*Except for the above table : All other spurious emissions were less than 20dB for the limit.