for

47 CFR, Part 15, Subpart C

- Equipment : Bluetooth USB printer adapter
- Model No. : GN-BTP01
- FCC ID. : JCK-GN-BTP01
- Filing Type : Certification
- Applicant : **GIGA-BYTE TECHNOLOGY CO., LTD.** No. 6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan, R.O.C.
- The test result refers exclusively to the test presented test model / sample.
- Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
- Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

Table of Contents

History of this test report	ii
CERTIFICATE OF COMPLIANCE	1
General Description of Equipment under Test. 1.1. Applicant 1.2. Manufacturer 1.3. Basic Description of Equipment under Test. 1.4. Feature of Equipment under Test.	2 2 2
2. Test Configuration of Equipment under Test	
2.1. Test Manner 2.2. Description of Test System 2.3. Connection Diagram of Test System	4 4 5
3. Test Software	6
 4. General Information of Test	
5. Report of Measurements and Examinations	8
5.1. List of Measurements and Examinations	8
5.2. Hopping Channel Separation	9
5.3. Number of Hopping Frequency	10
5.4. Hopping Channel Bandwidth	
5.5. Dwell Time of Each Frequency within a 30 Seconds Period	
5.6. Output Fower	13
5.8. Test of Conducted Emission	
5.9. Test of Radiated Emission	
5.10. Antenna Requirements	30
5.11. RF Exposure	31
6. EMI Suppression Component List	33
7. Antenna Factor & Cable Loss	34
8. List of Measuring Equipments Used	35
9. Uncertainty of Test Site	36

History of this test report

Original Report Issue Date: Oct. 06, 2003

No additional attachment.

Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No. : F391202

CERTIFICATE OF COMPLIANCE

for

47 CFR, Part 15, Subpart C

- Equipment : Bluetooth USB printer adapter
- Model No. : GN-BTP01
- FCC ID. : JCK-GN-BTP01
- Filing Type : Certification
- Applicant : **GIGA-BYTE TECHNOLOGY CO., LTD.** No. 6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan, R.O.C.

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2001** and the equipment under test was *passed* all test items required in FCC Part 15 subpart C, relative to the equipment under test. Testing was carried out on Sep. 24, 2003 at **SPORTON International Inc.** LAB.

The Chan ar 1, 2005

Alex Chen Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

SPORTON International Inc. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
 FCC ID.
 :
 JCK-GN-BTP01

 Page No.
 :
 1 of 36

 Issued Date
 :
 Oct. 06, 2003

1. General Description of Equipment under Test

1.1. Applicant

GIGA-BYTE TECHNOLOGY CO., LTD. No. 6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan, R.O.C.

1.2. Manufacturer

Same as 1.1

1.3. Basic Description of Equipment under Test

Equipment	: Bluetooth USB printer adapter
Model No.	: GN-BTP01
FCC ID	: JCK-GN-BTP01
Trade Name	: GIGABYTE
Power Supply Type	: Switching
AC Power Input	: Wall-Mount, 2pin
DC Power Cable	: Shielded, 1.8m, 2pin

1.4. Feature of Equipment under Test

	Product Feature & Specification				
1.	Host/Radio Interface	FHSS			
2.	Type of Modulation	GFSK			
3.	Number of Channels	79			
4.	Frequency Band	2402~2840			
5.	Bandwidth of each channel	1MHz			
6.	Maximum Output Power to Antenna	6.17dBm			
7.	IF & L.O. Frequency	32MHz			
8.	Type of Antenna Connector (Ex: SMA, TNC, MCX, MMCX, UFCetc)	UFC			
9.	Antenna Type / Class and Gain	2 dBi			
10.	Function Type	Transceiver			
11.	Power Rating (DC/AC, Voltage)	FAIRWAY / WN10A-050 Input: 100~240V, 50-60Hz, 1.0A Output: +5.0V, 2.0A			
12.	Basic function of product	BT communication			

FCC ID.:JCK-GN-BTP01Page No.:2 of 36Issued Date:Oct. 06, 2003

Channel	Frequency	Channel	Frequency
00	2402	40	2442
01	2403	41	2443
02	2404	42	2444
03	2405	43	2445
04	2406	44	2446
05	2407	45	2447
06	2408	46	2448
07	2409	47	2449
08	2410	48	2450
09	2411	49	2451
10	2412	50	2452
11	2413	51	2453
12	2414	52	2454
13	2415	53	2455
14	2416	54	2456
15	2417	55	2457
16	2418	56	2458
17	2419	57	2459
18	2420	58	2460
19	2421	59	2461
20	2422	60	2462
21	2423	61	2463
22	2424	62	2464
23	2425	63	2465
24	2426	64	2466
25	2427	65	2467
26	2428	66	2468
27	2429	67	2469
28	2430	68	2470
29	2431	69	2471
30	2432	70	2472
31	2433	71	2473
32	2434	72	2474
33	2435	73	2475
34	2436	74	2476
35	2437	75	2477
36	2438	76	2478
37	2439	77	2479
38	2440	78	2480
39	2441		

SPORTON International Inc. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255

FCC ID.: JCK-GN-BTP01Page No.: 3 of 36Issued Date: Oct. 06, 2003

2. Test Configuration of Equipment under Test

2.1. Test Manner

- a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2001 and configuration operated in a manner, which tended to maximize its emission characteristics in a typical application.
- b. The complete test system included EPSON Printer and EUT for EMI test.
- c. This device is an integration of an SIG qualified BlueTooth module. The used codes for modulating IF carrier is of course pseudo-random. The hopping sequence is determined by the address of the piconet master. Here is the hopping sequence indicated by channel number:
 02, 17, 68, 55, 4, 77, 56, 27, 70, 80, 22, 33, 57, 34, 29, 79, 44, 50, 3, 71, 66, 36, 78, 20, 67, 30, 24, 11, 37, 69, 23, 7, 41 38, 63, 14, 31, 59, 40, 13, 6, 25, 65, 15, 61, 73, 58, 47, 19, 28, 54, 76, 74, 48, 52, 75, 5, 42, 64, 72, 62, 51, 60, 18, 45, 53, 16, 39, 46, 32, 49, 43, 8, 21, 9, 12, 10, 26, 35
- d. For 15.247(g), during data transmission, the carrier frequency is repeatly switched on 79 hopping frequencies, any 2 hopping frequencies will not be available on the spectrum simultaneously. So, this device can be taken as true frequeny hopping device.
- e. For 15.247(h), the hopping sequence is determined by the address of piconet master. Each piconet master will have its unique address at any moment, so re-use of the hopping sequence is completely not possible. Within the piconet, one master can be communicated with many slaves via the same hopping sequency, but at any moment only one (master or slave) can be "talk". It is determined by the master that who should be "listen" or "talk". Any slave who want to "talk" has to sent "inquery" to master first. So, 2 slaves (or one slave one master) is not possible to be on "talk" mode simultaneously.
- f. The following test modes were pretested:
 - Mode 1: CH00 (2402MHz) Mode 2: CH39 (2441MHz) Mode 3: CH78 (2480MHz)
- g. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 25000MHz.

2.2. Description of Test System

Support Unit 1. -- Printer (EPSON)

FCC ID	: N/A
Model No.	: EPSON SYLUS PHOTO 830U
Power Supply Type	: Linear
Power Cord	: Non-Shielded
Serial No.	: SP0048
Data Cable	: Shielded, 1.35m
Remark	: This support device was tested to comply with FCC standards and
	authorized under a declaration of conformity.

2.3. Connection Diagram of Test System



3. Test Software

During testing, "HCI-Terminal" was executed to keep transmitting signals at fixed frequency and printing data

4. General Information of Test

Test Site Location	:	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
		Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.
		TEL : 886-3-327-3456
		FAX : 886-3-318-0055
Test Site No	:	CO01-HY, 03CH03-HY

4.1. Test Voltage

110V/60Hz

4.2. Standard for Methods of Measurement

ANSI C63.4-2001

4.3. Test in Compliance with

ANSI C63.4-2001 for conducted power line test and radiated emission test DA 00-705 for test of hopping channel separation DA 00-705 for test of number of hopping frequency used DA 00-705 for test of hopping channel bandwidth DA 00-705 for test of dwell time of each frequency within a 30 second period DA 00-705 for test of output power DA 00-705 for test of 100khz bandwidth of frequency band edges

4.4. Frequency Range Investigated

- a. Conduction: from 150 KHz to 30 MHz
- b. Radiation: from 30 MHz to 25000MHz

4.5. Test Distance

The test distance of radiated emission from antenna to EUT is 3 M.

5. Report of Measurements and Examinations

5.1. List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.247(a)(1)(ii)	Hopping Channel Bandwidth	Pass
<u>15.247(a)(1)</u>	Hopping Channel Separation	Pass
<u>15.247(a)</u> (1)(ii)	Number of Hopping Frequency Used	Pass
<u>15.247(a)</u> (1)(ii)	Dwell Time of Each Frequency within a 30 Second Period	Pass
<u>15.247(b)</u>	Output Power	Pass
15.247(c)	100KHz Bandwidth of Frequency Band Edges	Pass
<u>15.107</u> /15.207	Conducted Emission	Pass
15.209	Radiated Emission	Pass
<u>15.203</u>	Antenna Requirement	Pass

5.2. Hopping Channel Separation

5.2.1. Measuring Instruments :

As described in chapter 10 of this test report.

5.2.2. Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator.
- 2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
- 3. The Hopping Channel Separation is defined as the channel is separated with the next channel.

5.2.3. Test Setup Layout :



5.2.4. Test Result : The spectrum analyzer plots are attached as below

- Temperature: 26°C
- Relative Humidity: 63 %
- Duty cycle of the equipment during the test X = 100%

Channel	Frequency	Hopping Channel Separation	Limits	Plot
	(MHz)	(KHz)	(KHz)	Ref. No.
00	2402	1000.0000	25	1
39	2441	1000.0000	25	2
78	2480	1000.0000	25	3

5.2.5. Test Configuration (EUT Operating Condition) :

The software provided by client to enable the EUT under transmission condition. The EUT have its hopping function enabled.

5.3. Number of Hopping Frequency

5.3.1. Measuring Instruments :

As described in chapter 10 of this test report.

- 5.3.2. Test Procedure :
 - 1. The transmitter output was connected to the spectrum analyzer through an attenuator.
 - 2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
 - 3. The number of hopping frequency used is defined as the device has the numbers of total channel.

5.3.3. Test Setup Layout :



5.3.4. Test Result : See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 63 %
- Duty cycle of the equipment during the test X = 100%

Number of Hopping Frequency	Limits	Plot
(Channel)	(Channel)	Ref. No.
79	75	1

5.3.5. Test Configuration (EUT Operating Condition) :

The software provided by client to enable the EUT under transmission condition. The EUT have its hopping function enabled.

5.4. Hopping Channel Bandwidth

5.4.1. Measuring Instruments :

As described in chapter 10 of this test report.

5.4.2. Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator.
- 2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
- 3. The Hopping Channel bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

5.4.3. Test Setup Layout :



5.4.4. Test Result : See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 63 %
- Duty cycle of the equipment during the test X = 100%

Channel	Frequency	Hopping Channel Bandwidth	Limits	Plot
	(MHz)	(MHz)	(MHz)	Ref. No.
00	2402	0.2710	1.0	1
39	2441	0.2700	1.0	2
78	2480	0.2770	1.0	3

5.4.5. Test Configuration (EUT Operating Condition) :

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies respectively.

SPORTON International Inc.	FCC ID.	: JCK-GN-BTP01
TEL : 886-2-2696-2468	Page No.	: 11 of 36
FAX : 886-2-2696-2255	Issued Date	: Oct. 06, 2003

5.5. Dwell Time of Each Frequency within a 30 Seconds Period

5.5.1. Measuring Instruments :

As described in chapter 10 of this test report.

5.5.2. Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator.
- 2. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- 3. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- 4. The calculate = $30^{*}(1600/79)^{*}t$ (ie: t = the time duration of one single pulse)

5.5.3. Test Setup Layout :



5.5.4. Test Result : See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 63 %
- Duty cycle of the equipment during the test X = 100%

Channel	Frequency	Dwell Time	Limits	Plot
	(MHz)	(s)	(s)	Ref. No.
00	2402	0.09600000	0.4	1
39	2441	0.09478481	0.4	2
78	2480	0.09721519	0.4	3

5.5.5. Test Configuration (EUT Operating Condition) :

Same as Section 5.2.5.

5.6. Output Power

5.6.1. Measuring Instruments :

As described in chapter 10 of this test report.

5.6.2. Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator.
- 2. The center frequency of the spectrum analyzer was set to the fundamental frequency and set RBW to 1MHz and VBW to 1MHz.

5.6.3. Test Setup Layout :



5.6.4. Test Result : See spectrum analyzer plots below

- Temperature: 26°C
- Relative Humidity: 63 %
- Duty cycle of the equipment during the test X = 100%

Channel	Frequency	Measured Output Power	Measured Output Power	Limits
	(MHz)	(dBm)	(mWatt)	(Watt/dBm)
00	2402	6.17	4.139996748	1W/30 dBm
39	2441	6.08	4.055085354	1W/30 dBm
78	2480	4.86	3.061963434	1W/30 dBm

5.6.5. Test Configuration (EUT Operating Condition) :

Same as Section 5.4.5.

5.7. 100KHz Bandwidth of Frequency Band Edges

5.7.1. Measuring Instruments :

As described in chapter 10 of this test report.

5.7.2. Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
- 2. Set both RBW and VBW of spectrum analyzer to 100KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- 3. The band edges was measured and recorded.

5.7.3. Test Result :

Test Result in lower band (Channel 00):	PASS
Test Result in higher band(Channel 78):	PASS

5.7.4. Note on Band edge Emission

The band edge emission plot on appendix B page B15. shows 58.96dB delta between carrier maximum power and local maximum emission in the restricted band (2.4835GHz).

	The emission of	The maximum				
Polarity	carrier power	field strength in	Limit	Margin	Detector	Result
	strength	restrict band				
	(dB µ V/m)	(dB µ V/m)	(dB µ V/m)	(dB)		
н	94.82	35.86	74.00	-38.14	Peak	Pass
Н	94.32	35.36	54.00	-18.64	Average	Pass
V	103.23	44.27	74.00	-29.73	Peak	Pass
V	99.83	40.87	54.00	-13.13	Average	Pass

* The maximum field strength in restricted band is the emission of carrier power strength subtract to the delta between carrier maximum power and local maximum emission in the restricted band.

5.7.5. Test Configuration (EUT Operating Condition) :

The software provided by client to enable the EUT under transmission condition continuously at lowest, and highest channel frequencies respectively.

5.8. Test of Conducted Emission

Conducted Emissions were measured from 150 KHz to 30 MHz with a bandwidth of 9 KHz and return leads of the EUT according to the methods defined in ANSI C63.4-2001 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

5.8.1. Major Measuring Instruments :

•	Test Receiver	(R&S ESCS 30)
	Attenuation	10 dB
	Start Frequency	0.15 MHz
	Stop Frequency	30 MHz
	IF Bandwidth	9 KHz

5.8.2. Test Procedures :

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 KHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

5.8.3. Test Result of Conducted Emission :

- Test Mode: Mode 1
- Frequency Range of Test: from 150KHz to 30 MHz
- Temperature: 26°C
- Relative Humidity: 51 %
- Test Date: Sep. 24, 2003

The test was passed at the minimum margin that marked by a frame in the following data

Site	: COC)1-HY						
Condit	tion : CNS	/VCCI/	CISPR-B	2003 20	01/008	LINE		
EUT	: Blu	etooth	USB pr:	inter ad	lapter			
Power	: 110	0V 60Hz						
Node1	: GN-	BTP01						
Nemo	: TX	CH00 2	40.2MHz					
1000		0100 0	Drer	Limit.	Read	Prohe	Cohle	
	Frag	Level	Linis	Line	Level	Factor	Loss	Demark
							2022	
-	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.184	35.74	-28.56	64.30	35.59	0.10	0.05	QP
z	0.184	36.25	-18.05	54.30	36.10	0.10	0.05	Average
3	0.369	37.77	-20.75	58.52	37.53	0.10	0.14	QP
4	0.369	35.99	-12.53	40.52	35.75	0.10	0.14	Äverage
5	0.739	30.83	-15.17	46.00	30.60	0.10	0.13	Average
6	0.739	36.62	-19.38	56.00	36.39	0.10	0.13	QP
7	1.110	33.15	-22.85	56.00	32.95	0.10	0.10	QP
8	1.110	24.12	-21.88	46.00	23.92	0.10	0.10	Average
9	1.465	31.30	-24.70	56.00	31.14	0.10	0.06	QP
10	1.465	20.30	-25.70	46.00	20.14	0.10	0.06	Average
11	Z.189	26.97	-29.03	56.00	26.84	0.10	0.03	Q.P
12	2.189	14.07	-31.93	46.00	13.94	0.10	0.03	<u>kverage</u>
Site	- 000	1-82						
Site	: COC)1-HY	CT (100_1)	2003.20	01/000	METERAL		
Site Condit	: COC ion : CN2)1-HY S/VCCI/	CISPR-B	2003 20	01/008	NEUTRAL		
Site Condit EUT	: COC tion : CN2 : Blu)1-HY S/VCCI/ metooth	CISPR-B USB pr:	2003 20 inter ad	01/008 Mapter	NEUTRAL		
Site Condit EUT Power	: COC ion : CN2 : Blu : 110)1-HY s/VCCI/ setooth)V 60Hz	CISPR-B USB pr:	2003 20 inter ad	01/008 Mapter	NEUTRAL		
Site Condit EUT Power Model	: COC ion : CN2 : Blu : 110 : GN-	01-HY 5/VCCI/ netooth 0V 60Hz -BTP01	CISPR-B USB pr:	2003 20 inter ad	001/008 Mapter	NEUTRAL		
Site Condit EUT Power Model Memo	: COC tion : CN2 : Blu : Blu : GN- : TX	01-HY 5/VCCI/ netooth 0V 60Hz -BTP01 CH00 2	CISPR-B USB pr: 402MHz	2003 20 inter ad	001/008 lapter	NEUTRAL		
Site Condit EUT Power Nodel Nemo	: COC tion : CN2 : Blu : 110 : GN- : TX	01-HY s/VCCI/ metooth 0V 60Hz BTP01 CH00 2	CISPR-B USB pr: 402MHz Over	2003 20 inter ad	001/008 lapter Read	NEUTRAL Probe	Cable	
Site Condit EUT Power Nodel Nemo	: COC : CN2 : Blu : 110 : GN- : TX Freq	01-HY 5/VCCI/ ietooth 0V 60Hz -BTP01 CH00 2 Level	CISPR-B USB pr: 402MHz Over Limit	2003 20 inter ad Limit Line	001/008 lapter Read Level	NEUTRAL Probe Factor	Cable Loss	Benark
Site Condit EUT Power Nodel Nemo	: COO :: CN2 : Blu : 110 : GN- : TX Freq	D1-HY s/VCCI/ metooth V 60Hz -BTP01 CH00 2 Level	CISPR-B USB pr: 402MHz Over Limit	2003 20 inter ad Limit Line	Read Level	Probe Factor	Cable Loss	Bemark
Site Condit EUT Power Nodel Nemo	: COO : CN2 : Blu : 110 : GN- : TX Freq <u>MHz</u>	01-HY s/VCCI/ metooth 0V 60Hz -BTP01 CHOO 2 Level dBuV	CISPR-B USB pr: 402MHz Over Limit dD	2003 20 inter ad Limit Line dBuV	Read Level dBuV	Probe Factor dD	Cable Loss dD	Bemark
Site Condit EUT Power Nodel Nemo	: COO : CN2 : Blu : 110 : GN- : TX Freq <u>MMz</u>	01-HY 5/VCCI/ metooth 0V 60Hz -BTP01 CHOO 2 Level dBuV	CISPR-B USB pr: 402MHz Over Limit dD	2003 20 inter ad Limit Line dBuV	Read Level	Probe Factor dD	Cable Loss dD	Bemark
Site Condit EUT Power Nodel Nemo	: COO : Div : Biv : Biv : IIO : GN- : TX Freq MHz 0.186	01-HY 5/VCCI/ metooth 0V 60Hz BTP01 CH00 2 Level dBuV 42.07	CISPR-B USB pr: 402MHz Over Limit -22.14	2003 20 inter ad Limit Line dBuV 64.21	Read Level dDuV 41.92	Probe Factor 0.10	Cable Loss dD 0.05	Penark
Site Condit EUT Power Nodel Nemo	: COO : CN2 : Blu : Dlu : GN- : TX Freq <u>990z</u> 0.186 0.106	01-HY s/VCCI/ metooth W 60Hz BTP01 CH00 2 Level dBuV 42.07 42.07	CISPR-B USB pr: 402MHz 0ver Linit -22.14 -11.93	2003 20 inter ad Limit Line dBuV 64.21 54.21	001/008 lapter Read Level dDuV 41.92 42.13	Probe Factor 0.10	Cable Loss dD 0.05 0.05	QP Average
Site Condit EUT Power Nodel Memo	: COO : CN2 : Blu : Blu : GN- : TX Freq MHz 0.186 0.186 0.369	01-HY s/VCCI/ metooth W 60Mz -BTP01 CH00 2 Level dBuV 42.07 42.20 37.63 35.63	CISPR-B USB pr: 402MHz 0ver Limit -22.14 -11.93 -20.89	2003 20 inter ad Limit Line dBuV 64.21 54.21 58.52	001/008 lapter Read Level dBuV 41.92 42.13 37.39	Probe Factor dD 0.10 0.10	Cable Loss dD 0.05 0.14	QP Average QP
Site Condit EUT Power Nodel Memo 	: COO : Div : Biv : 110 : GN- : TX Freq 0.186 0.186 0.369 0.369 0.369	01-HY s/VCCI/ metooth 0V 60Hz -BTP01 CH00 2 Level dBuV 42.07 42.20 37.63 35.07 26.17	CISPR-B USB pr: 402MHz 0ver Limit -22.14 -11.93 -20.89 -13.45	2003 20 inter ad Limit Jine dBuV 64.21 54.21 58.52 48.52	001/008 lapter Read Level dBuV 41.92 42.13 37.39 34.83	Probe Factor dl 0.10 0.10 0.10 0.10	Cable Loss 0.05 0.14 0.14	QP Average QP Average
Site Condit EUT Power Nodel Nemo	: COO : Div : Biv : 110 : GN- : TX Freq 0.186 0.186 0.369 0.369 0.369 0.369	01-HY s/VCCI/ metooth 0V 60Hz BTP01 CH00 2 Level dBuV 42.07 42.20 37.63 35.07 36.44 20 20 20 20 20 20 20 20 20 20	CISPR-B USB pr: 402MHz 0ver Limit -22.14 -11.93 -20.89 -13.45 -19.56	2003 20 inter ad Limit dBuV 64.21 58.52 48.52 56.00	001/008 lapter Read Level dBuV 41.92 42.13 37.39 34.83 36.21	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10	Cable Loss dD 0.05 0.14 0.14 0.13	QP Average QP Average QP
Site Condit EUT Power Nodel Nemo 	: COO : Div : Biv : 110 : GN- : TX Freq 0.186 0.186 0.369 0.369 0.736 0.736	01-HY 5/VCCI/ ietooth 0V 60Hz BTP01 CH00 2 Level dDuV 42.07 42.20 37.63 35.07 36.44 28.94 24.94	CISPR-B USB pr: 402MHz 0ver Limit -22.14 -11.93 -20.89 -13.45 -19.56 -17.06 -21.94	2003 20 inter ad Limit dBuV 64.21 58.52 48.52 56.00 46.00 56.00	001/008 lapter Read Level dBuV 41.92 42.13 37.39 34.83 36.21 28.71 28.71	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10 0.10	Cable Loss dD 0.05 0.14 0.14 0.13 0.13	QP Average QP Average QP Average QP
Site Condit EUT Power Nodel Nemo 	: COO : Div : Div : Div : GN- : TX Freq 0.186 0.186 0.369 0.369 0.736 0.736 0.736 0.736	01-HY s/VCCI/ metooth 0V 60Hz BTP01 CH00 2 Level dDuV 42.07 42.20 37.63 35.07 36.44 28.94 34.04 29.64	CISPR-B USB pr: 402MHz 0ver Limit dll -22.14 -11.93 -20.89 -13.45 -19.56 -17.06 -22.91	2003 20 inter ad Limit dBuV 64.21 58.52 48.52 56.00 46.00 56.00	Read Level dBuV 41.92 42.13 37.39 34.83 36.21 28.71 33.83 29.48	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss 0.05 0.14 0.14 0.13 0.13 0.11	QP Average QP Average QP Average QP
Site Condit EUT Power Nodel Nemo 	: COO : Div : Div : Div : CN : Div : GN- : TX Freq 0.186 0.186 0.186 0.369 0.369 0.369 0.736 0.736 1.097 1.097	01-HY 5/VCCI/ ietooth 0V 60Hz BTP01 CH00 2 Level dDuV 42.07 42.20 37.63 35.07 36.44 28.94 34.04 23.69 21.95	CISPR-B USB pr: 402MHz Over Limit dl0 -22.14 -11.93 -20.89 -13.45 -19.56 -17.06 -21.96 -22.31 -24.12	2003 20 inter ad Limit Inne dBuV 64.21 58.52 48.52 56.00 46.00 56.00 46.00	Read Level dBuV 41.92 42.13 37.39 34.83 36.21 28.71 33.83 23.40 21.26	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dD 0.05 0.14 0.14 0.13 0.13 0.11 0.11	QP Average QP Average QP Average QP Average QP
Site Condit EUT Power Nodel Nemo 	: COO : Div : Div : Div : CN : Div : CN : CN : CN : CN : CN : CN : CN : CN	01-HY s/VCCI/ ietooth 07 60Hz BTP01 CH00 2 Level dBuV 42.07 42.20 37.63 35.07 36.44 28.94 34.04 23.69 31.90 26.65 35.07 36.44 28.94 31.90 26.65 35.07 36.45 28.94 31.90 26.65 26.95 26.65 26.55 26.	CISPR-B USB pr: 0ver Limit dB -22.14 -11.93 -20.89 -13.45 -19.56 -17.06 -21.96 -22.31 -24.10 -29.40	2003 20 inter ad Limit Line dBuV 64.21 54.21 58.52 48.52 56.00 46.00 56.00 46.00 56.00	001/008 lapter Read Level dBuV 41.92 42.13 37.39 34.83 36.21 28.71 33.83 23.40 31.76	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dD 0.05 0.14 0.13 0.11 0.11 0.11 0.04	QP Average QP Average QP Average QP Average QP
Site Condit EUT Power Nodel Nemo - 1 2 3 4 5 6 7 8 9 10	: COO : CN2 : Blu : Dlu : CN2 : TX Freq 0.186 0.186 0.369 0	01-HY s/VCCI/ netcoth 0V 60Hz BTP01 CH00 2 Level dBuV 42.07 42.20 37.63 35.07 36.44 28.94 34.04 23.69 31.90 16.60 29.51	CISPR-B USB pr: 0ver Limit -22.14 -11.93 -20.89 -13.45 -19.56 -17.06 -21.96 -22.31 -24.10 -29.40	2003 20 inter ad Limit Line dBuV 64.21 54.21 58.52 48.52 56.00 46.00 56.00 46.00 56.00 46.00	001/008 lapter Read Level dBuV 41.92 42.13 37.39 34.83 36.21 28.71 33.83 23.40 31.76 16.46 29.29	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dD 0.05 0.14 0.13 0.11 0.11 0.04 0.04	QP Average QP Average QP Average QP Average QP Average QP
Site Condit EUT Power Nodel Nemo - 1 2 3 4 5 6 7 8 9 10 11	: COO : CN2 : Blu : Dlu : GN- : TX Freq 0.186 0.186 0.369 0.360 0.360 0.360 0.369 0.360 0.370 0.360 0.360 0.360 0.360 0.360 0.	01-HY s/VCCI/ metooth W 60Hz -BTP01 CH00 2 Level dBuV 42.07 42.07 42.20 37.63 35.07 36.44 28.94 34.04 28.94 31.90 16.60 29.51	CISPR-B USB pr: 402MHz Over Limit -22.14 -11.93 -20.89 -13.45 -19.56 -17.06 -21.96 -22.31 -24.10 -29.40 -29.40 -29.40	2003 20 inter ad Limit Line dBuV 64.21 58.52 48.52 56.00 46.00 56.00 46.00 56.00 46.00	Read Level dBuV 41.92 42.13 37.39 34.83 36.21 28.71 33.83 23.40 31.76 16.46 29.39	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dD 0.05 0.14 0.13 0.14 0.13 0.11 0.11 0.04 0.04 0.02	QP Average QP Average QP Average QP Average QP Average QP Average QP

Test Engineer: GAEVE

Steve Chen

SPORTON International Inc.

TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
 FCC ID.
 :
 JCK-GN-BTP01

 Page No.
 :
 16 of 36

 Issued Date
 :
 Oct. 06, 2003

- Test Mode: Mode 2
- Frequency Range of Test: from 150KHz to 30 MHz
- Temperature: 26°C
- Relative Humidity: 51 %
- Test Date: Sep. 24, 2003

The test was passed at the minimum margin that marked by a frame in the following data

	I C0	01-HY							
Condition	: CN	S/VCCI/	CISPR-B	2003 20	01/008	LINE			
EUT	: B1	uetooth	USB pri	inter ad	anter				
Power	: 11	0V 60Hz							
Node 1	- GN	-BTP01							
Newo	- TX	CH39_2	441886						
			Over	Limit	Read	Prohe	Cable		
	Fred	Lesse 1	Linit	Line	Lesse 1	Factor	Loss	Benark	
		Devez		2220	Devez	180000	2022	1.	
)9(z	diluV	dll	Vullb	dilluV	dill	dli		
			_	1000 1110		_			
1	0.184	35.76	-28.53	64.29	35.61	0.10	0.05	QP	
2	0.184	36.46	-17.83	54.29	36.31	0.10	0.05	Average	
3	0.367	37.24	-21.34	58.58	37.00	0.10	0.14	Q.P.	
4	0.367	35.47	-13.11	48.58	35.23	0.10	0.14	Average	
5	0.736	36.34	-1.9.66	56.00	36.11	0.10	0.13	QP	
6	0.736	31.83	-14.17	46.00	31.60	0.10	0.13	Average	
7	1.105	32.98	-23.02	56.00	32.77	0.10	0.11	QP	
0	1.105	23.69	-22.31	46.00	23.40	0.10	0.11	Average	
9	1.669	30.97	-25.03	56.00	30.82	0.10	0.05	QP	
10	1.669	15.15	-30.85	46.00	15.00	0.10	0.05	Average	
11	2.034	20.20	-27.72	56.00	28.16	0.10	0.02	QP	
12	Z.034	14.28	-31.7Z	46.00	14.16	0.10	0.02	Average	
Q4 #-A	- CO	01-177							
Site	: 00	01-HY	CTCDD_D	2002.20	01/000	NEITTOAT			
Site Condition	: CO 1 : CN	01-HY S/VCCI/	CISPR-B	2003 20	01/008	NEUTRAL			
Site Condition EUT Remar	: CO : : CN : B1	01-HY S/VCCI/ uetooth	CISPR-B USB pri	2003 20 inter ad	01/008 Lapter	NEUTRAI			
Site Condition EUT Power	: C0 : CN : B1 : 11	01-HY S/VCCI/ uetooth OV 60Hz	CISPR-B USB pri	2003 20 inter ad	01/008 Napter	NEUTRAI			
Site Condition EUT Power Model	: C0 : CN : B1 : 11 : GN	01-HY S/VCCI/ uetooth OV 60Hz -BTP01	CISPR-B USB pri	2003 20 inter ad	01/008 lapter	NEUTRAI			
Site Condition EUT Power Model Memo	: C0 : CN : B1 : 11 : GN : TO	01-HY S/VCCI/ uetooth OV 60Hz -BTP01 CH39 2	CISPR-B USB pri 441MHz	2003 20 inter ad	01/008 lapter	NEUTRAI			
Site Condition EUT Power Nodel Nemo	: C0 : CN : B1 : 11 : GN : T>	01-HY S/VCCI/ uetooth OV 60Hz -BTP01 CH39 2	CISPR-B USB pro 441MHz Over	2003 20 inter ad	01/008 lapter Read	Probe	Cable	Para da	
Site Condition EUT Power Nodel Nemo	: CO : E1 : B1 : 11 : GN : T Freq	01-HY S/VCCI/ uetooth 0V 60Hz -BTP01 CH39 2 Level	CISPR-B USB pri 441MHz Over Limit	2003 20 inter ad Limit Line	01/008 lapter Read Level	NEUIRAI Probe Factor	Cable Loss	Demark	
Site Condition EUT Power Nodel Nemo	: CO : E1 : 11 : GN : TO Freq	01-HY S/VCCI// uetooth 0V 60Hz -BTP01 (CH39 2 Level	CISPR-B USB pri 441MHz Over Limit	2003 20 inter ad Limit Line	01/008 Inpter Read Level	Probe Factor	Cable Loss	Demark	
Site Condition EUT Power Nodel Nemo	: CO : CN : B1 : 11 : GN : T> Freq MHz	01-HY S/VCCI/ uetooth 0V 60Hz -BTP01 CCH39 2 Level dBuV	CISPR-B USB pri 441MHz Over Linit 	2003 20 inter ad Limit Line dBuV	D1/008 lapter Read Level dBuV	NEUTRAI Probe Factor dB	Cable Loss dB	Demark	
Site Condition EUT Power Nodel Nemo	: CO : CN : B1 : 11 : GN : T> Freq MHz 0, 104	01-HY S/VCCI/ uetooth 0V 60Hz -BTP01 C CH39 2 Level dBuV 42 17	CISPR-B USB pri 4411MHz Over Limit dB	2003 20 inter ad Limit Iine dBuV 64 30	Dead Level dBuV	Probe Factor	Cable Loss dB	Demark	
Site Condition EUT Power Nodel Nemo	: CO : CN : B1 : 11 : GN : T) Freq MHz 0.104 0.184	01-HY S/VCCI// uetooth 0V 60Hz -BTP01 C CH39 2 Level dBuV 42.17 42.28	CISPR-B USB pri 4411MHz Over Limit -22.13 -12.02	2003 20 inter ad Limit Line dBuV 64.30	Dead Level dBuV 42.02	Probe Factor 0.10	Cable Loss dB 0.05	QP	_
Site Condition EUT Power Nodel Nemo	: CO : CN : B1 : 11 : GN : T) Freq MHz 0.104 0.369	01-HY S/VCCI// uetooth 0V 60Hz -BTP01 C CH39 2 Level dBuV 42.17 42.28 35.84	CISPR-B USB pr: 4411MHz Over Limit -22.13 -12.02 -12.69	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53	01/008 lapter Read Level dBuV 42.02 42.13 35.60	Probe Factor 0.10 0.10	Cable Loss dB 0.05 0.05 0.14	Demark OP Average	
Site Condition EUT Power Nodel Nemo	: CO : CN : B1 : 11 : GN : TD Freq MHz 0.104 0.369 0.369	01-HY S/VCCI// uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 37.71	CISPR-B USB pr: 441MHz Over Limit -22.13 -12.02 -12.69 -20.82	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 58.53	01/008 lapter Read Level 42.02 42.13 35.60 37.47	Probe Factor 0.10 0.10 0.10	Cable Loss dB 0.05 0.14 0.14	Demark OP Average OP	
Site Condition EUT Power Nodel Nemo	: C0 : CN : B1 : 11 : GN : T) Freq MHz 0.104 0.369 0.743	01-HY S/VCCI/ uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 37.34	CISPR-B USB pr: 441MHz Over Limit -22.13 -12.02 -12.69 -20.02 -18.66	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 50.53 56.00	D1/008 lapter Read Level 42.02 42.13 35.60 37.47 37.11	Probe Factor dB 0.10 0.10 0.10 0.10 0.10	Cable Loss dB 0.05 0.14 0.14 0.13	Demark OP Average OP OP OP	
Site Condition EUT Power Nodel Nemo	: C0 : CN : B1 : 11 : GN : T7 Freq 0.104 0.104 0.369 0.369 0.743 0.743	01-HY S/VCCI/ uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 35.84 37.71 37.34 24.66	CISPR-B USB pr: 441MHz 0ver Linit -22.13 -12.02 -12.69 -20.02 -18.66 -21.34	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 56.00 46.00	D1/008 apter Read Level <u>42.02</u> 42.13 35.60 37.47 37.11 24.43	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10	Cable Loss dB 0.05 0.14 0.14 0.13 0.13	Demark OP Average OP OP QP Average	
Site Condition EUT Power Nodel Nemo	: C0 : CN : B1 : 11 : GN : T7 Freq 0.104 0.104 0.369 0.743 0.743 1.095	01-HY S/VCCI// uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 37.71 37.34 24.66 33.96	CISPR-B USB pr: 441MHz 0ver Linit -22.13 -12.02 -12.69 -20.92 -18.66 -21.34 -22.04	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 58.53 56.00 46.00 56.00	01/008 apter Read Level 42.02 42.13 35.60 37.11 24.43 33.75	Probe Factor dB 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dB 0.05 0.14 0.13 0.11	Demark OP Average OP QP Average QP	
Site Condition EUT Power Nodel Nemo	: C0 : CN : B1 : 11 : GN : T) Freq 0.104 0.104 0.369 0.369 0.743 0.743 1.095 1.095	01-HY S/VCCI/ uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 37.34 23.84 37.34 24.66 33.96 23.83	CISPR-B USB pr: 441MHz Over Limit -22.13 -12.02 -12.69 -20.02 -18.66 -21.34 -22.04 -22.17	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 50.53 56.00 46.00 56.00 46.00	01/008 apter Read Level 42.02 42.13 35.60 37.47 37.11 24.43 33.75 23.62	Probe Factor 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dB 0.05 0.14 0.14 0.13 0.13 0.11	Demark QP Average QP QP Average QP Average QP	
Site Condition EUT Power Nodel Nemo	: C0 : CN : B1 : 11 : GN : T) Freq 0.104 0.369 0.369 0.743 0.743 0.743 1.095 1.095 1.290	01-HY S/VCCI// uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 37.71 37.34 23.66 33.96 23.83 21.63	CISPR-B USB pr: 441MHz Over Limit -22.13 -12.02 -12.69 -20.02 -18.66 -21.34 -22.04 -22.17 -24.37	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 50.53 56.00 46.00 46.00 46.00	01/008 apter Read Level 42.02 42.13 35.60 37.47 37.11 24.43 33.75 23.62 23.62 21.45	Probe Factor 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dB 0.05 0.14 0.14 0.13 0.13 0.11 0.11 0.08	Demark OP Average OP QP Average QP Average Average	
Site Condition EUT Power Nodel Nemo	: CO : CM : B1 : 11 : GM : T7 Freq 0.104 0.369 0.369 0.743 1.095 1.095 1.290 1.290	01-HY S/VCCI// uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 37.71 37.34 23.66 33.96 23.83 21.63 31.04	CISPR-B USB px: 0ver Limit -22.13 -12.02 -12.69 -20.02 -18.66 -21.34 -22.04 -22.17 -24.37 -24.96	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 56.00 46.00 46.00 46.00 56.00	01/008 apter Read Level 42.02 42.13 35.60 37.47 37.11 24.43 33.75 23.62 21.45 30.06	Probe Factor 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dB 0.05 0.14 0.14 0.13 0.13 0.11 0.11 0.08 0.00	Demark OP Average OP QP Average QP Average QP Average QP	
Site Condition EUT Power Nodel Nemo	: CO : CN : B1 : 11 : GN : T7 Freq 0.104 0.369 0.369 0.369 0.369 0.743 1.095 1.095 1.290 1.660	01-HY S/VCCI/ uetooth 0V 60Hz -BTP01 CH39 2 Level dBuV 42.17 42.28 35.84 37.71 37.34 24.66 33.83 21.63 31.04 25.33	CISPR-B USB px: 0ver Limit -22.13 -12.02 -12.69 -20.02 -18.66 -21.34 -22.04 -22.17 -24.37 -24.96 -20.67	2003 20 inter ad Limit Line dBuV 64.30 54.30 48.53 56.00 46.00 46.00 46.00 56.00 46.00	01/008 npter Read Level 42.02 42.13 35.60 37.47 37.11 24.43 33.75 23.62 21.45 30.06 25.18	Probe Factor 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.1	Cable Loss dB 0.05 0.14 0.14 0.13 0.11 0.11 0.11 0.08 0.00 0.05	Demark OP Average OP QP Average QP Average QP Average QP Average	

Test Engineer: <u>LAEVE</u>

Steve Chen

SPORTON International Inc.

TEL : 886-2-2696-2468 FAX : 886-2-2696-2255 FCC ID.:JCK-GN-BTP01Page No.:17 of 36Issued Date:Oct. 06, 2003

- . Test Mode: Mode 3
- Frequency Range of Test: from 150KHz to 30 MHz
- Temperature: 26°C
- Relative Humidity: 51 %
- Test Date: Sep. 24, 2003

The test was passed at the minimum margin that marked by a frame in the following data

Site Condi: EUT Power Nodel Nemo	: COC tion : CNS : Blu : Blu : GN- : TX)1-HY S/VCCI/(letooth)V 60Hz BTP01 CH78 2	USB pr: 080	2003 20 inter ad	01/008 Lapter	LINE	6-bb-	
			Uver	Limit	Read	Frobe	Cable	
) red	Level	Limit	Line	reast.	Factor	TORE	Remark
-	MHz	dBuV	dB	dBuV	dBuV	68	dB	
1	0.187	34.90	-29.27	64.17	34.75	0.10	0.05	Q.P.
2	0.187	35.05	-19.12	54.17	34.90	0.10	0.05	Average
3	0.369	36.42	-12.10	40.52	36.10	0.10	0.14	Average
4	0.369	37.89	-20.63	58.52	37.65	0.10	0.14	Q.P.
Б	0.741	36.98	-19.02	56.00	36.75	0.10	0.13	4.0
6	0.741	29.0Z	-16.90	46.00	20.79	0.10	0.13	Average
7	1.109	32.70	-23.30	56.00	32.50	0.10	0.10	Q.P
8	1.109	28.88	-17.12	46.00	28.68	0.10	0.10	Average
	1.460	4 00	-31.00	46.00	43.28	0.10	0.07	ur Imenen
11	1.460	9.87	-95 41	46.00	90.46	0.10	0.07	Average
12	1.850	18 28	-23.41	46.00	10.46	0.10	0.03	d F
	41000	****		10100		0.20	0100	Average
Site	: 000	1-HV						
Condit	tion : CNS	VVCCI/	CISPR-B	2003 20	01/008	NEUTRAL		
FILL	: Blu	etooth	USE pr	inter ad	lenter		·	
Pomer	- 110	W 60Hz	own bu	ALLOCK GO	oup ou c			
Nodel	- CN-	PTP01						
None	- 00	CH20 5	690					
NO CARDO	: 17	unio 2.	400	Lindt	Read	Such a	Cohlo.	
	Prov	Lorro 1	linin	Limo	Terro 1	Frone	Land	Demonit
	11ed	Tenet	PIRIC	Line	Tenet	Faccor	TORE	PARATE
	MHz	dBuV	œ	dBu⊽	₫BuV	dB	dB	
1	0.185	42.11	-22.13	64.24	41.96	0.10	0.05	QP
z	0.185	42.42	-11.8Z	54.24	42.27	0.10	0.05	Average
3	0.371	33.81	-14.67	48.48	33.57	0.10	0.14	<i>kverage</i>
4	0.371	37.95	-20.53	50.40	37.71	0.10	0.14	QP
5	0.739	37.46	-18.54	56.00	37.23	0.10	0.13	QP
6	0.739	30.47	-15.53	46.00	30.24	0.10	0.13	<i>kverage</i>
7	1.104	33.62	-22.30	56.00	33.41	0.10	0.11	QP
8	1.104	24.95	-21.05	46.00	24.74	0.10	0.11	Average
9	1.480	30.42	-25.58	56.00	30.26	0.10	0.06	QP
10	1.480	18.60	-27.40	46.00	18.44	0.10	0.06	Average
11	1.670	33.00	-23.00	56.00	3Z.85	0.10	0.05	Q.P.
12	1.670	19.64	-26.36	46.00	19.49	0.10	0.05	<i>kver age</i>

Test Engineer: <u>LAEVE</u>

Steve Chen

5.9. Test of Radiated Emission

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2001. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 5.9.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

5.9.1. Major Measuring Instruments

Amplifier	(MITEQ AFS44)
RF Gain	40 dB
Signal Input	100 MHz to 26.5 GHz
Amplifier	(HP 8447D)
RF Gain	30 dB
Signal Input	100 KHz to 1.3 GHz
 Spectrum analyzer 	(R&S FSP40)
Attenuation	10 dB
Start Frequency	1 GHz
Stop Frequency	25 GHz
Resolution Bandwidth	1 MHz
Video Bandwidth	1 MHz
Signal Input	9 KHz to 40 GHz
 Test Receiver 	(SCHAFFNER SCR3501)
Resolution Bandwidth	120 KHz
Frequency Band	9 K – 1 GHz
Quasi-Peak Detector	ON for Quasi-Peak Mode
	OFF for Peak Mode

5.9.2. Test Procedures

- 1. The EUT was placed on a rotatable table top 0.8 meter above ground.
- 2. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest radiation.
- 4. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- 5. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- 6. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- 7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- 8. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

5.9.3. Typical Test Setup Layout of Radiated Emission



5.9.4. Test Result of Radiated Emission

- Test Mode: Mode 1
- Test Distance: 3 M
- Temperature: 26 °C
- Relative Humidity: 63 %
- Test Date: Sep. 18, 2003
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test was passed at the minimum margin that marked by the frame in the following test record

Spurious Emission

Site	:	030	7H-60H									
Condit	ion :	3ы.	03CH03	-MAT HO	RIZONTAL	L						
EUT		B1v	aetooth	USB pr	inter ac	lapter						
Power		110	0V/60Hz									
MODEL		GN-	-BTP01									
MEMO		TΧ	CHO0 2	40.2MHz								
		F39	91202									
				0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Fr	eq	Level	Limit	Line	Level	Factor	Loss	Factor	Reaark	Pos	Pos
-	н	Hz	dBuV/m	dill	dBuV/n	dDuV		dD	dD		C16	deg
1	0-2 Q	20	00 74	-17.96	40.00	95.01	12 00	1.02	27.10	Deals		
-	170.0	E0	20 55	-14 86	43 50	48 62	3 60	1 92	26 60	Deak		
6	216 0	a0 a0	20.00	-17 72	46.00	40.26	0.00	1 00	26.60	Peak		
1	210.0	00	20.27	-14 32	46.00	44.10	11 71	2 33	26.60	Peak		
2	640.2	00	91 91	-14.02	46.00	98.91	17 57	2.00	28.00	Peak		
9	766.9	00	32 15	-13 85	46.00	37 14	18 53	4 49	28.00	Peak		
~	100.5	50	02.20	10.00	40.00	07.14	10.00	4.40	20.00	reak		

Site		: 03	CH03-HY										
Condit	ion :	311	03CH03	-MAT VER	RTICAL								
EUT		Bl	uetooth	USB pr	inter ad	lapter							
Power		110	0V/60Hz										
MODEL		GN	-BTP01										
MEMO		TX	CH00 2	402MHz									
		F3:	91202										
				Over	Limit	Read	Probe	Cable	Preamp		Ant	Table	
	y	zed	Level	Linit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos	
-		MHg	dBuV/n	dB	dBuV/n	dBuV	48	dB	dB		cas	deg	
1	34.	860	33.77	-6.23	40.00	46.81	13.0Z	1.04	27.10	Pealt	100	105	
2	43.	770	32.48	-7.52	40.00	49.36	9.14	1.08	27.10	Peak			
3	143.	940	26.07	-17.43	43.50	41.41	9.93	1.55	26.02	Peak			
1	478.	500	33.27	-12.73	46.00	42.00	15.74	3.12	27.59	Peak			
2	640.	200	33.89	-12.11	46.00	40.43	17.57	3.89	28.00	Peak			
3	704.	600	32.55	-13.45	46.00	38.32	18.04	4.19	28.00	Peak			
1	2302.	000	49.51	-24.49	74.00	42.56	28.02	6.08	27.15	Peak			
2	2302.	000	43.47	-10.53	54.00	36.52	28.02	6.08	27.15	Average			

➢ For 5GHz ~ 25GHz

Remark: Frequency from 5000MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

SPORTON International Inc. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
 FCC ID.
 :
 JCK-GN-BTP01

 Page No.
 :
 22 of 36

 Issued Date
 :
 Oct. 06, 2003

Frequency		Antenna	Cable	Reading	Lim	Limits		Level	Margin	Detect
	Polarity	Factor	Loss							
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)	(dB)	Mode
2404.000	Н	28.23	6.21	61.15	-	-	95.59	60186.63		Peak
2404.000	Н	28.23	6.21	59.06	-	-	93.50	47315.13		A.V.
2404.000	V	28.23	6.21	68.61	-	-	103.05	142069.22		Peak
2404.000	V	28.23	6.21	64.41	-	-	98.85	87599.17		A.V.
4804.000	Н	33.03	9.05	15.48	74.00	5011.87	57.56	755.09	-16.44	Peak
4804.000	Н	33.03	9.05	10.09	54.00	501.19	52.17	405.98	-1.83	A.V.
4804.000	V	33.03	9.05	14.12	74.00	5011.87	56.20	645.65	-17.80	Peak
4804.000	V	33.03	9.05	8.13	54.00	501.19	50.21	323.97	-3.79	A.V.
7206.000	V/H						-			Peak,
9608 000	V/H						_			Peak,
										A.V. Peak.
12010.000	V/H						-			A.V.
14412.000	V/H						-			Peak, A V
16814.000	V/H						-			Peak,
	.,									A.V.
19216.000	V/H						-			AV
04040.000	\ <i>//</i> /1.1									Peak,
21018.000	V/H						-			A.V.
24020.000	V/H						-			Peak, A.V.

Field strength of fundamental and harmonics

Remark: The emission emitted by the EUT is too low to be measured except the emission listed above

Test Engineer: GAEVE

Steve Chen

SPORTON International Inc. TEL: 886-2-2696-2468 FAX: 886-2-2696-2255

- Test Mode: Mode 2
- Test Distance: 3 M
- Temperature: 26 °C
- Relative Humidity: 63 %
- Test Date: Sep. 18, 2003
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test was passed at the minimum margin that marked by the frame in the following test record

Spurious Emission

Site	: 03	CH03-HY										
Condit	ion : 3m	03CH03	-MAT HO	RIZONTA	L							
EUL	: B1	uetooth	USB pr	inter a	lapter							
Power	: 11	0V/60Hz			-							
MODEL	: GN	-BTP01										
MEMO	: TX	CH39 2	441MHz									
	: F3	91202										
			0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table	
	Freq	Level	Linit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		Cilli	deg	
1	179.850	29.37	-14.13	43.50	46.74	7.59	1.72	26.60	Peak			
z	191.730	29.41	-14.09	43.50	46.88	7.39	1.77	26.63	Pealt			
3	221.970	30.07	-15.93	46.00	45.42	9.33	1.92	26.60	Peak			
1	318.200	31.90	-14.10	46.00	44.26	11.98	2.37	26.71	Peak			
2	640.200	30.55	-15.45	46.00	37.09	17.57	3.89	28.00	Peak			
3	766 900	32.23	-13.77	46.00	37.22	18.53	4.48	28.00	Peak			

Site	: 0	3CH03-HY									
Conditio	n : 3:	a 03CH03	-MAT VE	RTICAL							
EUT	: B	luetooth	USE pr	inter a	dapter						
Power	: 1	10V/60Hz	-		-						
MODEL	: G	N-BTP01									
MEMO	: T.	X CH39 2	441MHz								
	$\rightarrow E$	391202									
			0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Free	f Level	Limit	Line	Level	Factor	Loss	Factor	Reaark	Pos	Pos
	25C	t dBuV/m	dD	dBuV/n	dDuV	dill	dD	dD		Chi	deg
1	22 0.20		-6.02	40.00	47 07	12.06	1.05	27.10	Deals		
-	49 804) 33.90) 39 FC	-0.02	40.00	47.37	0.00	1.00	27.10	Func		
6	43.500	1 32.50	-7.44	40.00	49.30	9.20	1.00	27.10	reak		
3	6Z.940	29.45	-10.55	40.00	50.41	4.94	1.17	27.07	Pealt		
1 4	78.500	34.49	-11.51	46.00	43.22	15.74	3.12	27.59	Peak		
Z 6	40.200	34.37	-11.63	46.00	40.91	17.57	3.89	28.00	Peak		
3 7	04.600	33.59	-12.41	46.00	39.36	18.04	4.19	28.00	Peak		

Site	: 0	3CH03-HY									
Condition	: 3	a HORN-A	NT-6741	HORIZON	ITAL						
EUT	: B	luetooth	USB pr	inter ad	dapter						
Power	: 1	10V/60Hz									
MODEL	: G	N-BTP01									
MEMO	: T	X CH39 2	441MHz								
	$: \mathbb{P}$	391202									
			0ver	Limit	Read	Probe	Cable	Preanp		Ånt	Table
	Fre	q Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MIG	z dBuV/m	dill	dBuV/n	dBuV	dD	dD	30		Chi	deg
1 2286	. 00	0 50.60	-23.40	74.00	43.69	27.99	6.06	27.14	Peak		
2 2206	. 00	0 41.72	-12.28	54.00	34.01	27.99	6.06	27.14	Average		

Site	÷	03	CH03-HY										
Condition	÷	38.	HORN-AL	NT-6741	VERTIC/	AL.							
EUT	÷	Blu	uetooth	USB pr	inter ad	lapter							
Power	÷	110	0V/60Hz										
MODEL	÷	GN	-BTP01										
MEMO	÷	ТΧ	CH39 2	441MHz									
	÷	F3:	91202										
				Over	Limit	Read	Probe	Cable	Preamp		Ant	Table	
	Fr	eq	Level	Linit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos	
	2	ΞĮφ	dBuV/≞	dB	dBuV/n	dBuV	dB	dB	dB		Ch	deg	
			F4 05	10.04	74 00					B1-			
1 2286		00	54.06	-19.94	74.00	47.15	27.99	6.06	27.14	Peak			
2 2286	i. C	00	51.72	-2.28	54.00	44.81	27.99	6.06	27.14	Average	100	102	

➢ For 5GHz ∼ 25GHz

Remark: Frequency from 5000MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Frequency		Antenna	Cable	Reading	Lim	nits	Emission	Level	Margin	Detect
	Polarity	Factor	Loss							
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)	(dB)	Mode
2444.000	Н	28.31	6.27	59.26	-	-	93.84	49203.95		A.V.
2444.000	Н	28.31	6.27	57.62	-	-	92.20	40738.03		Peak
2438.000	V	28.30	6.26	69.74	-	-	104.30	164058.98		Peak
2438.000	V	28.30	6.26	66.38	-	-	100.94	111429.45		A.V.
4884.000	Н	33.19	9.10	14.29	74.00	5011.87	56.58	674.53	-17.42	Peak
4884.000	Н	33.19	9.10	8.02	54.00	501.19	50.31	327.72	-3.69	A.V.
4884.000	V	33.19	9.10	15.61	74.00	5011.87	57.90	785.24	-16.10	Peak
4884.000	V	33.19	9.10	3.97	54.00	501.19	46.26	205.59	-7.74	A.V.
7323.000	V/H						-			Peak,
9764 000	V/H						-			Peak,
40005 000										A.V. Peak.
12205.000	V/H						-			A.V.
14646.000	V/H						-			Peak, A.V.
17087.000	V/H						-			Peak,
										A.V. Dook
19528.000	V/H						-			A.V.
21060.000										Peak,
21909.000	V/П						-			A.V.
24410.000	V/H						-			Peak, A.V.

■ Field strength of fundamental and harmonics

Remark: The emission emitted by the EUT is too low to be measured except the emission listed above

Test Engineer: <u>LAEVE</u>

Steve Chen

SPORTON International Inc. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255

- Test Mode: Mode 3
- Test Distance: 3 M
- Temperature: 26 °C
- Relative Humidity: 63 %
- Test Date: Sep. 18, 2003
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level Preamp Factor = Level

The test was passed at the minimum margin that marked by the frame in the following test record

Spurious Emission

Site	: 030	CH03-HY									
Conditi	on : 3m	03CH03	-MAT HOU	RIZONTAL	6						
EUT	: Bl:	uetooth	USB pr	inter ad	lapter						
Power	: 110	0V/60Hz									
MODEL	: GN-	-BTP01									
MEMO	: TX	CH78 2	480MHz								
	: F3:	91202									
			0ver	Limit	Read	Probe	Cable	Preamp		Ånt	Table
	Freq	Level	Linit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
_											
	MHz	dBuV/n	dB	dBuV/n	dBuV	dB	dB	ďB		Ch	deg
1.1	30,000	36 16	-3.84	40.00	46 90	15 35	1 01	27 10	Peak		
2	191.730	30.46	-13.04	43.50	47.93	7.39	1.77	26.63	Peak		
3	197.940	30.39	-13.11	43.50	47.91	7.29	1.80	26.61	Peak		
1	575.800	31.54	-14.46	46.00	38.91	16.98	3.58	27.93	Peak		
2	640.200	31.05	-14.95	46.00	37.59	17.57	3.89	28.00	Peak		
3	766.900	32.13	-13.87	46.00	37.12	18.53	4.48	28.00	Peak		

Site	: 0	3CH03-HY									
Condit	ion : 3	a. 03CH03	-MAT VE	RTICAL							
EUT	: B	luetooth	USB pr	inter ad	dapter						
Power	: 1	10V/60Hz									
MODEL	: G	N-BTP01									
MEMO	: T	X CH78 2	480MHz								
	: 7	391202									
			0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Fre	q Level	Linit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
_											
	200	z dBuV/m	dD	dBuV/n	d⊞uV	dill	dD	dD		Ch	deg
1	34.05	0 30.03	-9.97	40.00	42.76	13.34	1.03	27.10	Peak		
2	179.85	0 27.30	-16.20	43.50	44.67	7.59	1.72	26.68	Peak		
3	186.06	0 27.07	-16.43	43.50	44.40	7.49	1.75	26.65	Peak		
1	478.50	0 33.88	-12.12	46.00	42.61	15.74	3.12	27.59	Peak		
2	575.80	0 33.10	-12.90	46.00	40.47	16.98	3.58	27.93	Peak		
3	640.20	0 35.63	-10.37	46.00	42.17	17.57	3.89	28.00	Peak		

Site	:	03	сноз-ну									
Condition	2	Зa,	HORN-A	NT-6741	HORIZON	TAL						
EUT		B11	uetooth	USB pr	inter a	lapter						
Power		110	0V/60Hz	-		-						
MODEL	-	GN	-BTP01									
MEMO	:	ТΧ	CH78 2	480MHz								
	:	F3	91202									
				0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
	Fr	eq	Level	Linit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
		_										
	2	Ħz	dBuV/n	dB	@BuV/≞	dBuV	dB	dB	ďB		Chi	deg
1 205				14.00	24.00	10 50	00 FF		05.40			
T 33.64		00	57.±±	-10.03	74.00	42.60	36.55	9.20	27.40	Peak		
Z ! 3966	5.0	100	50.49	-3.51	54.00	36.06	32.55	9.Z8	27.40	Average		

Site		: 030	CH03-HY									
Condi	tion	: 3m.	HORN-AU	NT-6741	VERTIC/	AL.						
EUT		: Bl:	uetooth	USB pr	inter ad	lapter						
Power		: 110	0V/60Hz									
MODEL		: GN-	-BTP01									
MEMO		: TX	CH78 2	480MHz								
		: F3:	91202									
				0ver	Limit	Read	Probe	Cable	Preamp		Ant	Table
		Freq	Level	Linit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
-												
		MHZ	dBuv/m	(EE)	dBuV/n	dBuy	625	dВ	dB		Ch	deg
1	2302	. 000	50.10	-23.90	74.00	43.15	28.02	6.08	27.15	Peak		
2	2302	. 000	47.07	-6.93	54.00	40.12	28.02	6.08	27.15	Average		
3	100 At 100 At 10		E. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	-0.0 4.0	24.00	44 84	20.07	6.11	27.15	Peak		
-	2324	1.000	51.57	-22.43	74.00	44.04	100101		0.110.0	1.0.000		
4	2324 2324	.000	45.77	-8.23	54.00	38.74	28.07	6.11	27.15	Average		
4	2324 2324 3798	.000	\$1.57 45.77 56.85	-22.43 -8.23 -17.15	74.00 54.00 74.00	38.74	28.07	6.11 8.86	27.15	Average Peak		

➢ For 5GHz ∼ 25GHz

Remark: Frequency from 5000MHz to 25000MHz, the emission emitted by the EUT is too low to be measured

Frequency		Antenna	Cable	Reading	Lim	its	Emission	Level	Margin	Detect
	Polarity	Factor	Loss							
(MHz)		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)	(dB)	Mode
2478.000	Н	28.38	6.31	60.13	-	-	94.82	55080.77		Peak
2478.000	Н	28.38	6.31	59.63	-	-	94.32	51999.60		A.V.
2478.000	V	28.38	6.31	68.54	-	-	103.23	145044.08		Peak
2478.000	V	28.38	6.31	65.14	-	-	99.83	98061.83		A.V.
4960.000	V/H						-			Peak, A V
7440 000	V/H						-			Peak,
1 1 101000	•,••									A.V. Book
9920.000	V/H						-			A.V.
12400 000	\//н						_			Peak,
12400.000	V/11									A.V.
14880.000	V/H						-			Peak,
										A.V. Dook
17360.000	V/H						-			A.V.
										Peak,
19840.000	V/H						-			A.V.
22320 000	\//Н						_			Peak,
22020.000	V/II						-			A.V.
24800.000	V/H						-			Peak, A.V.

Field strength of fundamental and harmonics

Remark: The emission emitted by the EUT is too low to be measured except the emission listed above

Test Engineer: CAEVE

Steve Chen

5.10. Antenna Requirements

The EUT use a detachable antenna via UFC external connector. It is considered meet antenna requirement of FCC.

5.10.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.10.2. Antenna Connected Construction

The maximum Gain antenna used in this product is dipole antenna. The antenna connector type is UFC The coaxial cable of the antenna is fixed to the antenna.

5.11. RF Exposure

FCC Rules and Regulations Part 1.1307,1.1310,2.1091,2.1093:

RF Exposure Compliance

5.11.1. Limit For Maximum Permissible Exposure (MPE)

Frequency Range	Electric Field Strength	Magnetic Field	Power Density (S)	Averaging Time
(MHz)	(E) (V/m)	Strength (H) (A/m)	(mW/ cm2)	E 2, H 2 or S
				(minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(A) Limits for Occupational / Controlled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range	Electric Field Strength	Magnetic Field	Power Density (S)	Averaging Time
(MHz)	(E) (V/m)	Strength (H) (A/m)	(mW/cm2)	E 2, H 2 or S
				(minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

F=frequency in MHz

*Plane-wave equivalent power density

5.11.2. MPE Calculations

$$E (V/m) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd (mW/cm2) = \frac{E^2}{3770}$$

E = Electric field (V/m)

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (m)

Because the EUT is belong to General Population/ Uncontrolled Exposure. So the Limit of Power Density is 10 W/m2. We can change the formula to:

$$d = \sqrt{\frac{30 \times P \times G}{3770}}$$

Channel NO.	Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated RF Exposure Separation Distance (cm)	Minimum RF Exposure Separation Distance (cm)
Channel 1	2.00	1.58	6.17	4.14	0.23	20
Channel 6	2.00	1.58	6.08	4.06	0.23	20
Channel 11	2.00	1.58	4.86	3.06	0.20	20

5.11.3. FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation. Proposed RF exposure safety information to include in User's Manual.

6. EMI Suppression Component List

No EMI suppression components.

7. Antenna Factor & Cable Loss

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)	Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	15.35	1.01	1000	24.30	3.89
35	13.63	1.03	2000	31.10	5.41
40	11.11	1.06	3000	29.60	6.92
45	10.59	1.08	4000	30.80	8.24
50	6.47	1.11	5000	34.20	9.22
55	5.83	1.13	6000	33.30	10.25
60	5.18	1.15	7000	37.80	11.61
65	4.81	1.18	8000	39.40	11.78
70	4.43	1.20	9000	38.40	12.59
75	5.10	1.22	10000	38.90	13.84
80	5.91	1.24	11000	41.10	14.64
85	7.33	1.27	12000	42.70	14.12
90	8.74	1.29	13000	43.90	16.01
95	9.05	1.32	14000	43.70	13.76
100	9.36	1.34	15000	43.40	14.30
110	9.65	1.39	16000	40.90	15.16
120	9.97	1.43	17000	44.40	15.88
130	10.51	1.48	18000	47.10	16.09
140	10.32	1.53	19000	37.60	16.98
150	9.42	1.57	20000	37.30	16.21
160	8.09	1.62	21000	37.00	20.13
170	7.43	1.67	22000	38.00	19.24
180	7.60	1.72	23000	38.70	19.64
190	7.43	1.76	24000	38.60	20.54
200	7.26	1.81	25000	38.90	20.14
220	9.11	1.91	14000	43.70	13.76
240	10.88	2.00	15000	43.40	14.30
260	11.75	2.09	16000	40.90	15.16
280	11.55	2.19	17000	44.40	15.88
300	11.30	2.28	18000	47.10	16.09
320	12.03	2.38	19000	37.60	16.98
340	12.09	2.47	20000	37.30	10.21
300	13.33	2.07	21000	37.00	20.13
300	14.00	2.00	22000	30.00	19.24
400	14.03	2.70	23000	20.70	19.04
400	10.00	2.99	24000	30.00	20.54
550	16.65	3.46	23000	50.50	20.14
600	17 29	3 70			
650	17.23	3 93			
700	18.00	<u> </u>			
750	18.39	4.40			
800	18.79	4.64			
850	19.10	4.87			
900	19.42	5.11			
950	19.58	5.35			
1000	19.75	5 58			

8. List of Measuring Equipments Used

				•		
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9 KHz – 2.75 GHz	Jun. 12, 2003	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001-008	9 KHz – 30 MHz	Apr. 29, 2003	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001-009	9 KHz – 30 MHz	Apr. 29, 2003	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450 Hz	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 ~ 60 Hz	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9KHz~30MHz	Jan. 07, 2003	Conduction (CO01-HY)
50 ohm BNC type Terminal	NOBLE	50ohm	TM009	50 ohm	Apr. 24, 2003	Conduction (CO01-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	Jun. 21, 2003	Radiation (03CH03-HY)
Spectrum analyzer	R&S	FSP40	100004	9KHZ~40GHz	Aug. 07, 2003	Radiation (03CH03-HY)
Receiver	SCHAFFNER	SCR 3501	417	9 KHz –1GHz	Feb. 20, 2003	Radiation (03CH03-HY)
Amplifier	HP	8447D	2944A09072	100KHz – 1.3GHz	Oct. 21, 2002	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2687	30MHz –2GHz	Dec. 21, 2002	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	Jan. 02, 2003	Radiation (03CH03-HY)
Amplifier	MITEQ	AFS44	879981	100MHz~26.5GHz	Jul. 23, 2003	Radiation (03CH03-HY)
Horn Antenna	COM-POWER	AH-118	10094	1GHz – 18GHz	Apr. 10, 2003	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)
Horn Antenna	Schwarzbeck	BBHA9170	BBHA9170154	15GHz~40GHz	Jun. 02, 2003	Radiation (03CH03-HY)
RF Cable-HIGH	Jye Bao	RG142	CB030-HIGH	1GHz~29.5GHz	Mar. 14, 2003	Radiation (03CH03-HY)
Power meter	R&S	NRVS	100444	DC~40GHz	May 28, 2003	Conducted
Power sensor	R&S	NRV-Z55	100049	DC~40GHz	May 28, 2003	Conducted
Power Sensor	R&S	NRV-Z32	100057	30MHz-6GHz	May 28, 2003	Conducted
AC power source	HPC	HPA-500W	HPA-9100024	AC 0~300V	May 27, 2003	Conducted
Temp. and Humidity	KSON	THS-C3L	612	N/A	Oct. 02, 2002	Conducted
Power meter	R&S	NRVS	100444	DC~40GHz	May 28, 2003	Conducted

Calibration Interval of instruments listed above is one year.

SPORTON International Inc. TEL: 886-2-2696-2468

FAX : 886-2-2696-2255

 FCC ID.
 :
 JCK-GN-BTP01

 Page No.
 :
 35 of 36

 Issued Date
 :
 Oct. 06, 2003

9. Uncertainty of Test Site

Uncertainty of Radiated Emission Measurement

Contribution	Probability Distribution	3m
Antenna factor calibration	normal(k=2)	±1
cable loss calibration	normal(k=2)	±0.3
RCV/SPA specification	rectangular	±2
Antenna Directivity	rectangular	±3
Antenna Factor V.S. Height	rectangular	±2
Antenna Factor Interpolation for Frequency	rectangular	±0.25
site imperfection	rectangular	±2
Mismatch Receiver VSWR Γ1=0.09 Antenna VSWR Γ2=0.67 Uncertainty=20log(1-Γ1*Γ2)	U-shaped	±0.54
combined standard uncertainty Ue(y)	normal	±2.7
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	normal (k=2)	±5.4

U= { $(1/2)^2+(0.3/2)^2+(2^2+0.5^2+2^2+0.25^2+2^2)/3+(0.54)^2/2$ }=2.2 for 10m test distance

U= ${(1/2)^2+(0.3/2)^2+(2^2+3^2+2^2+0.25^2+2^2)/3+(0.54)^2/2}=2.7$ for 3m test distance

Uncertainty of Conducted Emission Measurement

Contribution	Probability Distribution	150KHz – 30MHz
Cable and I/P attenuator calibration	normal(k=2)	±0.3
RCV/SPA specification	rectangular	±2
LISN coupling specification	rectangular	±1.5
Transducer factor frequency interpolation	rectangular	±0.2
Mismatch		
Receiver VSWR Г1=0.09		
LISN VSWR Γ2=0.33	U-shaped	0.2
Uncertainty=20log(1-Γ1*Γ2)		
combined standard uncertainty Ue(y)	normal	±1.66
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	normal (k=2)	±3.32

 $U = \{(0.3/2)^2 + (2^2 + 1.5^2 + 0.2^2)/3 + (0.2)^2/2\} = 1.66$