4. Band Edge

4.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Spectrum Analyzer	Advantest	R3272 / 72421194	May, 2001
Х	Power Meter	HP	EPM-441A	May, 2001
Х	Test Receiver	R & S	ESCS 30 / 825442/14	May, 2001
	Spectrum Analyzer	Advantest	R3261C / 71720140	May, 2001
	Pre-Amplifier	HP	8447D/3307A01812	May, 2001
Х	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2000
Х	Horn Antenna	EM	EM6917 / 103325	May, 2001

The following test equipments are used during the band edge tests:

Note: 1. All equipments that need to calibrate are with calibration period of 1 year. 2. Mark "X" test instruments are used to measure the final test results.

4.2. Test Setup

RF Conducted Measurement:



4.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

4.4. Minimum Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

4.5. Test Result of Band Edge

Product	:	Acer Bluetooth Shuttle
Test Item	:	Band Edge Data
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

RF Conducted Measurement

Measurement Frequency	Measurement level	Required Limit	Result
(MHz)	(dBc)	(dBc)	
2400.00	-35.53 dB	<20	Pass



RF Radiated Measurement

Measurement Frequency	Measurement level	Required Limit	Result
(MHz)	(dBì V/m)	(dBì V/m)	
2483.9527	52.16 dB	<54	Pass



5. Peak Power Output

5.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Spectrum Analyzer	Advantest	R3272/72421194	May, 2001
Х	Power Meter	HP	EPM-441A	May, 2001

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.2. Mark "X" test instruments are used to measure the final test results.

5.2. Test Setup

Conduction Power Measurement



5.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

5.4. Minimum Standard

The maximum peak power shall be less 0.125 Watt.



5.5. Test Result of Peak Power Output

Product	:	Acer Bluetooth Shuttle
Test Item	:	Peak Power Output Data
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

Channel No.	Frequency(MHz)	Measurement	Required Limit	Result
Channel 00	2401.99	17.79dBm	0.125Watt= 20.96 dBm	Pass
Channel 39	2441.00	17.73 dBm	0.125Watt= 20.96 dBm	Pass
Channel 78	2479.95	17.57 dBm	0.125Watt= 20.96 dBm	Pass





Channel 79 Torrest Torrest	
LIR12101B #2 (L) Ihu 2001 Jun 7	14:26
REF 30.0 dBm MKR 2.47995 GHz	
100D/ H_VTEW FUST D_DTANK FUST 17.57 0Dm	
	Irace A
MARKER	1
2.47995 GHZ	Write A
	~
	View A
	3
	Blank A
	Diank H
	4 May Hald
	Max HUTO
	A
Manufacture .	
have with a set of the	Detector
	6
	Trc Menu)
	AB
	7
CENTER 2.48000 GHz SPAN 50.00 MHz	1/2 more
*RBW 1 MHz	17 2 1 1101 0

6. Occupied Bandwidth

6.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Spectrum Analyzer	Advantest	R3272 / 72421194	May, 2001
Х	Horn Antenna	EM	EM6917 / 103325	May, 2001

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.2. Mark "X" test instruments are used to measure the final test results.

6.2. Test Setup



6.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

6.4. Standard Reqirement

The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

6.5. Test Result of Occupied Bandwidth

Product	:	Acer Bluetooth Shuttle
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

Measurement Level	Required Limit	Result
(MHz)	(MHz)	
0.98001	<1	Pass



7. Channel of Number

7.1. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

7.2. Minimum Standard

Frequency hopping systems operating in the 2400-2483.5 MHz bands shall use at least 75 hopping frequencies.

7.3. Method of Measurement

The system shall hop to channel frequencies that selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.



7.4. Test Result of Channel Number

Product	:	Acer Bluetooth Shuttle
Test Item	:	Sweep of Channel Number
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

2402-2411MHz



2411-2421MHz



Product	:	Acer Bluetooth Shuttle
Test Item	:	Sweep of Channel Number
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

2421-2431MHz



Mon 2001 Jun 18 21:30 MKR 2.44105 GHz REF 40.0 dBm 10dB/ A_View Posi B_Blank Posi 17.54 dBm Color MARKER 2.1.4 4.105,3GHz 훘 8 10 Color 1 Color 2 STOP 2.44150 GHz *ATT 60dB START 2.43149 GHz *RBW 100 kHz *VBW 1 MHz Gray *SWP 20 ms Multi Marker List 17.57 dBm 17.59 dBm 17.26 dBm 17.39 dBm 17.52 dBm 17.52 dBm 17.54 dBm 17.52 dBm 17.54 dBm 17.54 dBm B & ₩ 2.43204 GHz 1: 2: 3: 4: 5: 2.43204 6Hz 2.43305 6Hz 2.43404 6Hz 2.43505 6Hz 2.43605 6Hz 2.43605 6Hz 2.43705 6Hz 2.43804 6Hz 2.43906 6Hz 2.43906 6Hz 2.44004 6Hz 2.44105 6Hz 6: 7: 8: 9: 10: ______ Inverse

2431-2441MHz

Product	:	Acer Bluetooth Shuttle
Test Item	:	Sweep of Channel Number
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

2441-2451MHz

2451-2461MHz



Mon 2001 Jun 18 21:42 MKR 2.46104 GHz REF40.0 dBm 10dB/ A_View Posi B_Blank Posi 17.41 dBm Color MARKER 24,46,£Ø4,3GHz 5 8 Color 1 Color 2 START 2.45149 GHz *RBW 100 KHz *VBW 1 MHz STOP 2.46150 GHz *ATT 60dB Gray *SWP 20 ms *4 Multi Marker List 2.45202 6Hz 2.45304 6Hz 2.45404 6Hz 2.45404 6Hz 2.45501 6Hz 2.45603 6Hz 2.45803 6Hz 2.45803 6Hz 2.45804 6Hz 2.45904 6Hz 2.46004 6Hz B & ₩ 16.74 dBm 17.42 dBm 17.34 dBm 1: 2: 3: 4: 5: 6: 7: 8: 9: 16.88 dBm 16.88 dBm 16.95 dBm 16.72 dBm 16.89 dBm 17.44 dBm 17.34 dBm 17.41 dBm 10: Δ: Inverse

Product:Acer Bluetooth ShuttleTest Item:Sweep of Channel NumberTest Site:No.1 OATSTest Mode:Normal Operation

2461-2471MHz



2471-2481MHz



8. Channel Separation

8.1. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

8.2. Minimum Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

8.3. Method of Measurement

The system shall hop to channel frequencies that selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

8.4. Test Result of Channel Separation

Product	:	Acer Bluetooth Shuttle
Test Item	:	Channel Separation Data
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

Measurement Level	Required Limit	Result
(MHz)	(kHz)	
1.02	>25	Pass



9. Dwell Time

9.1. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

9.2. Minimum Standard

The dwell time shall be the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

9.3. Method of Measurement

The average time of occupancy on any frequency measured in zero span function of spectrum analyzer.



9.4. Test Result of Dwell Time

Product	:	Acer Bluetooth Shuttle
Test Item	:	Dwell Time Data
Test Site	:	No.1 OATS
Test Mode	:	Normal Operation

Measurement Level	Required Limit	Result
155*0.5=77.5(ms)	<0.4 (sec)	Pass



Mon 2001 Jun 18 20:3	5		
REF 30.0 dBm MKR 13.74 ms			
10dB/ A_View Posi B_Blank Posi -39.39 dBm			
	Color		
	1 Color 1		
	²		
and we have been been and the second and the second the second second the second s			
	3		
CENTER 2.402000000 GHz SPAN 0.000 kHz *RBW 1 MHz *VBW 1 MHz *SWP 20 ms *ATT 40dB	- Gray		
Multi Marker List			
1: 13.24 ms -40.45 dBm	B & ₩		
2: 13.74 ms -39.39 dBm			
3:			
4:			
5:			
6:			
7:			
8:			
9:			
10:	7		
Δ:	Inverse		

10. EMI Reduction Method During Compliance Testing

No modification was made during testing.

11. Attachment

Attachment 1: EUT Test Photographs	Number of Pages :	3
Attachment 2: EUT Detail Photographs	Number of Pages :	4