



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test report file number : E021R-030

Applicant : Artec Corporation Ltd.

Address : 3F, Choyang Bldg., 45, Mugyo-Dong, Chung-Gu, Seoul, 100-170, Korea

Manufacturer : Artec Corporation Ltd.

Address : 3F, Choyang Bldg., 45, Mugyo-Dong, Chung-Gu, Seoul, 100-170, Korea

Type of Equipment : MP3 Player (Class B Computing Device Peripheral)

FCC ID : P6BJUNGLEI

Model / Type No. : Jungle i

Multiple Model/ Type No. : Teac MP-5000, JNC SSF-886, JNC SSF-896

Serial number : N/A

Total page of Report : 12 pages (including this page)

Date of Incoming : December 06, 2001

Date of Issuing : January 21, 2002

SUMMARY

The equipment complies with the requirements of **FCC CFR 47 PART 15 SUBPART B, Class B.**

This test report contains only the results of a single test of the sample supplied for the examination.

It is not a general valid assessment of the features of the respective products of the mass-production.

Prepared by: G. W. Lee
G. W. Lee/ Assistant Chief Engineer

Reviewed by: Y. K. Kwon
Y. K. Kwon/ Chief Engineer

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FCC-003 (Rev.0)

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ONETECH

Testing & Evaluation Lab.

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1. VERIFICATION OF COMPLIANCE

-. APPLICANT : Artec Corporation Ltd.
 -. ADDRESS : 3F, Choyang Bldg., 45, Mugyo-Dong, Chung-Gu, Seoul, 100-170, Korea
 -. CONTACT PERSON : Mr. Sang-Won, Oh/ Assistant Manager
 -. TELEPHONE NO : +82-2-778-1004
 -. FCC ID : P6BJUNGLEI
 -. MODEL NO/NAME : Jungle i
 -. SERIAL NUMBER : N/A
 -. DATE : January 21, 2002

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	MP3 Player
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4/1992
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. GENERAL INFORMATION

2.1 Product Description

The Artec Corporation Ltd., Model Jungle i (referred to as the EUT in this report) is a MP3 Player that is connected the USB hub standard of personal computer for file up/down. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Metal
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	12.0 MHz, 48 MHz on Main B'D, 14.725 MHz on Switch B'D
NUMBER OF LAYERS	4 Layers (Main B'D), 2 Layers (Switch B'D)
EXTERNAL TERMINALS	Earphone, USB Standard Port, Charger Jack

Model Differences:

The difference(s) compared to the EUT is as follows:

	Model Name	Model Difference
Basic Model	Jungle i	-
Added Model	Teac MP-5000 JNC SSF-886 JNC SSF-896	Only type designation by buyer.

2.2 Related Submittal(s) / Grant(s)

Original submittal only

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2.3 Test System Details

The model numbers for all the equipments that were used in the tested system is:

Model	Manufacturer	FCC ID.	Description	Connected to
Jungle i	Artec Corporation Ltd.	P6BJUNGLEI	MP3 Player(EUT)	PC
-	Artec Corporation Ltd.	N/A	AC/DC ADAPTER	EUT
-	-	N/A	EARPHONE	EUT
S690	SAMSUNG	DOC	NOTEBOOK PC	-
M-SAS51	Logitech	LZB03300009	MOUSE	PC
AD-6019(V)	Samsung Elect.	N/A	AC/DC ADAPTER	PC
2225C	HP	DSI6XU2225	PRINTER	PC

2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4/1992. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.5 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)

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3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN B'D	Artec Corporation Ltd.	N/A	N/A
SWICH B'D	Artec Corporation Ltd.	N/A	N/A

3.2 EUT exercise Software

- . The EUT was playing MP3 music file in memory of the EUT.
- . The EUT was downloading / uploading MP3 files from notebook PC via USB port.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
MP3 Player (EUT)	N/A	N	1.2(D)
AC/DC ADAPTER (for EUT)	N	N	1.5(D)
NOTEBOOK PC	N	-	1.5(P)
MOUSE	N	N	1.2 (D)
AC/DC ADAPTER (for notebook PC)	N	N	1.2(P), 1.0(D)
PRINTER	N	Y	1.5(P), 1.5(D)

* The marked "(P)" means the Power Cable.

3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
MP3 Player (EUT)	N	N/A	Y	BOTH END
AC/DC ADAPTER (for EUT)	N	N/A	Y	EUT END
NOTEBOOK PC	-	-	-	-
MOUSE	N	N/A	Y	Notebook PC END
AC/DC ADAPTER (for notebook PC)	Y	Notebook PC END	Y	Notebook PC END
PRINTER	N	N/A	Y	BOTH END

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3.5 Equipment Modifications

To achieve compliance to CLASS B levels, the following change(s) was made by ONETECH Corp. during compliance testing:

“There was no Modified items during EMI test”

3.6 Configuration of Test System

Line Conducted Test : The EUT was connected to AC/DC adapter and the AC/DC adapter connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary radiated emission test was conducted using the procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.

4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode		The Worse operating condition (Please check one only)
Playing		
File Down/Up Loading	Charger Adapter	X
	Notebook PC Power	

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Playing	
File Down/Up Loading	X

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5. FINAL RESULT OF MEASUREMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level

5.1 Conducted Emission Test

Humidity Level : 49 % Temperature : 19 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107
 Type of Test : CLASS B
 Result : PASSED BY -12.83 dB at 0.46 MHz

EUT : MP3 Player Date: December 06, 2001
 Operating Condition : File Down/Up Loading
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

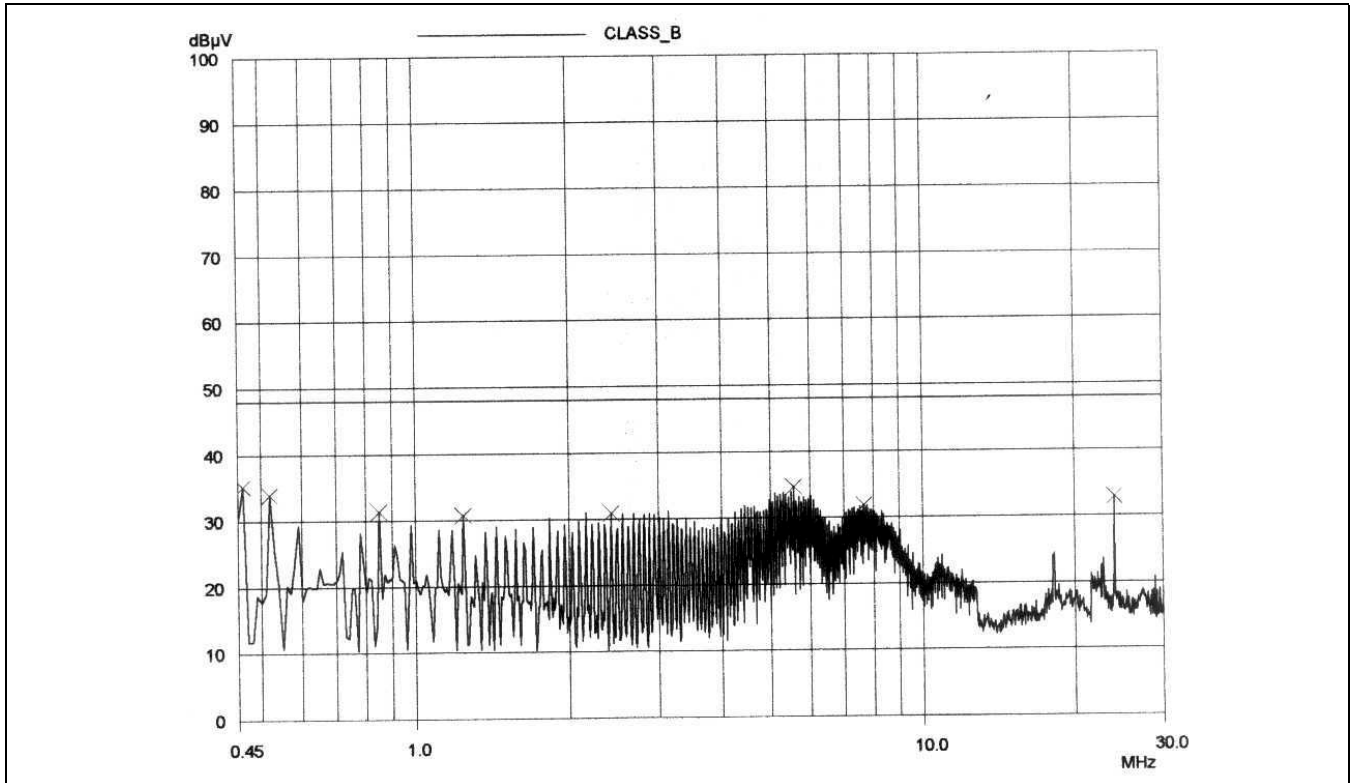
Power Line Conducted Emission			FCC CLASS B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Limit (dBuV)	Margin (dB)
0.46	35.17	HOT	48.00	-12.83
0.52	33.93	HOT	48.00	-14.07
4.65	33.53	NEUTRAL	48.00	-14.47
4.91	33.48	NEUTRAL	48.00	-14.52
5.56	34.65	HOT	48.00	-13.35
24.00	32.83	HOT	48.00	-15.17

Line Conducted Emission Tabulated Data

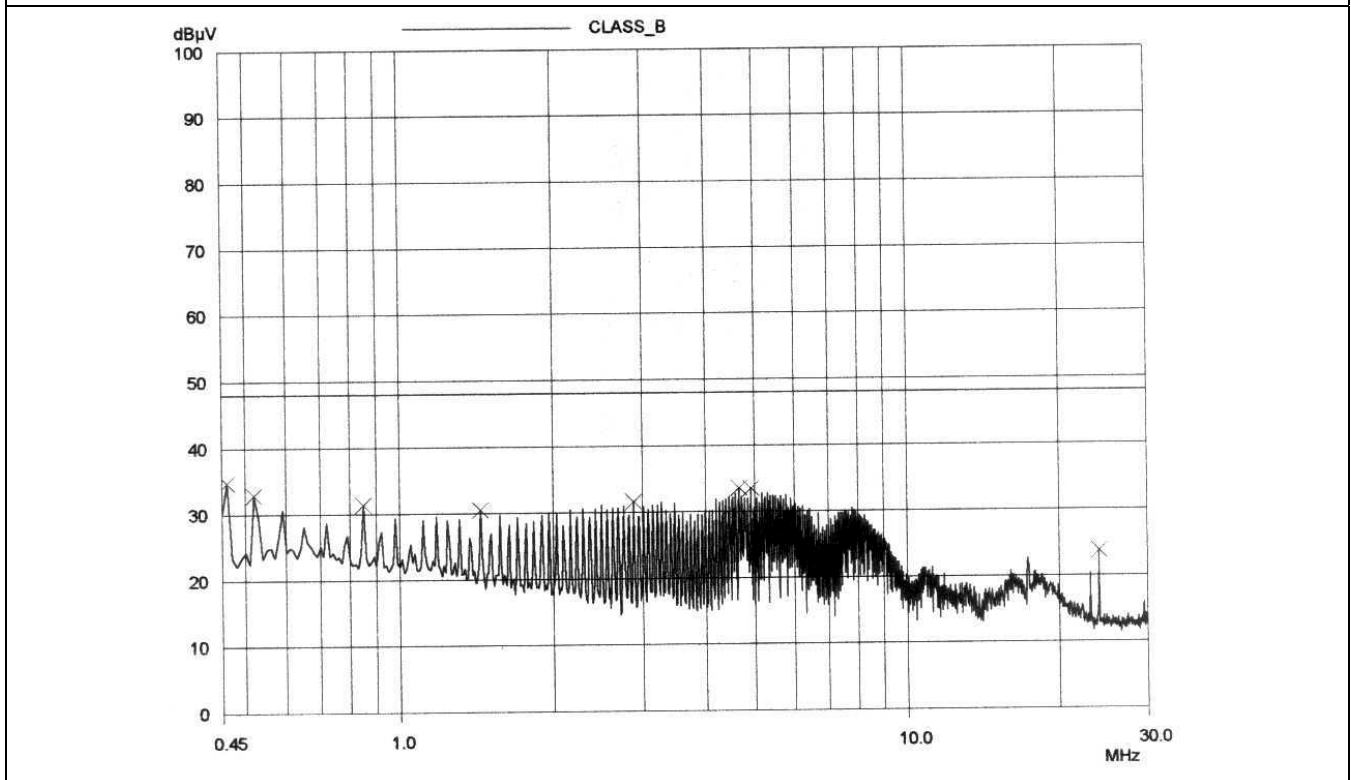

 Tested by: Young-Min Choi / Project Engineer



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HOT LINE



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NEUTRAL LINE

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5.2 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 47 % Temperature : 15 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109
 Type of Test : CLASS B
 Result : PASSED BY -6.14 dB at 48.00 MHz

EUT : MP3 Player Date: December 06, 2001
 Operating Condition : File Down/Up Loading
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
48.00	22.10	V	10.85	0.91	33.86	40.00	-6.14
72.00	24.70	V	7.40	1.00	33.10	40.00	-6.90
84.00	22.90	V	7.14	1.08	31.12	40.00	-8.88
96.00	24.00	V	10.35	1.13	35.48	43.50	-8.02
120.00	15.70	V	13.19	1.23	30.12	43.50	-13.38
144.03	15.60	V	13.29	1.33	30.22	43.50	-13.28
204.00	20.90	H	11.20	1.59	33.69	43.50	-9.81
227.80	18.80	H	10.81	1.71	31.32	46.00	-14.68
240.01	18.30	H	11.36	1.78	31.44	46.00	-14.56
260.01	20.30	H	12.29	1.85	34.44	46.00	-11.56
288.01	15.10	H	13.83	1.95	30.88	46.00	-15.12
336.01	14.60	H	14.39	2.21	31.20	46.00	-14.80
384.01	15.70	H	15.03	2.40	33.13	46.00	-12.87
480.00	14.50	H	17.18	2.62	34.30	46.00	-11.70

Radiated Emissions Tabulated Data

Remark: "H": Horizontal, "V": Vertical



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Tested by: Young-Min Choi / Project Engineer

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6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)

document property name.

7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	OCT/01	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	APR/01	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3109A05456	APR/01	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	APR/01	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	APR/01	12MONTH	■
6.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	APR/01	12MONTH	■
7.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	APR/01	12MONTH	■
8.	LISN	EMCO	3825/2	9109-1867 9109-1869	JUL/01	12MONTH	■
9.	Computer System	HP	98581C	98543A	N/A	N/A	■
	Hard disk drive		9153C	CMC762Z9153	N/A	N/A	■
10.	Plotter	HP	7475A	30052 22986	N/A	N/A	■
11.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
12.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
13.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■