ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

Test report file number	**: E00NR-004**
Applicant	**: INTELLIX CORP., LTD.**
Address	**: Yerim Bldg 305, 143-19 Samsung-Dong, Kangnam-Gu, Seoul, 135-090, Korea.**
Manufacturer	**: INTELLIX CORP., LTD.**
Address	**: Yerim Bldg 305, 143-19 Samsung-Dong, Kangnam-Gu, Seoul, 135-090, Korea.**
Type of Equipment	**: Multi-functional Speakerphone**
FCC ID	**: PBE-DTA-201**
Model / Type No.	**: DTA-201**
Serial number	**: N/A**
Total page of Report	**: 13 pages (including this page)**
Date of Incoming	**: April 7, 2000**
Date of issuing	**: October 17, 2000**

SUMMARY

The equipment complies with the regulation; FCC CFR47 PART 15 SUBPART B Section 15.101.

This test report contains only the result 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: Youm Koom. Nam
Y. K. Nam / Asst. Chief Engineer

Reviewed by:
S. S. Hong / Managing Director

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EMC Dept.
ONETECH Corp.

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1. CERTIFICATION OF COMPLIANCE

APPLICANT	: INTELLIX CORP., LTD.
ADDRESS	: Yerim Bldg 305, 143-19 Samsung-Dong, Kangnam-Gu, Seoul, 135-090, Korea.
CONTACT PERSON	: J. H. Yoo
TELEPHONE NO	: 82-2-555-8290
FCC ID	: PBE-DTA-201
MODEL NO/NAME	: DTA-201
SERIAL NUMBER	: N/A
DATE	: October 17, 2000

DEVICE TYPE	Peripheral Device for Class B Computing Device -Unintentional Radiator
E.U.T. DESCRIPTION	Multi-functional Speakerphone
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 CFR47 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 INTELLIX CORP., LTD., Model DTA-201 (referred to as the EUT in this report) is an Multi-functional Speakerphone for fax communication and displayed on screen caller ID, which will be connected to a (note) personal computer. Product specification information described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic – Non coated
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	20.0MHz, 32.256MHz, 48.00MHz
Chipset BRAND Name and Part No	CONEXANT, FC100-M
POWER REQUIREMENT	AC/DC ADAPTER INPUT : 120V / 60Hz, OUTPUT : DC 9V, 800mA
NUMBER OF LAYERS	MAIN B/D : 4 Layers, LCD B/D : 2 Layers
LINE IN	RJ-11 (ANALOG 2 LINES)
LINE OUT	RJ-11 (ANALOG 2 LINES) : Connected to Facsimile and Telephone
USB	TYPE B RECEPTACLE : 12Mbps
SPEAKER	8 ohm, 81dB, 5W
MICROPHONE	680 ohm, -46 ~ 54dB
NO. OF EXTERNAL CONNECTOR	Line port for local line, Phone port for telephone , Phone Jack for Headset USB port for interface with Personal Computer

Model Differences:

-. None

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 which were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
DTA-201	INTELLIX CORP., LTD.	PBE-DTA-201	Multi-functional Speakerphone (EUT)	NOTEBOOK PC
EMOTION	SAMBO Computer	DOC	NOTEBOOK PC	EUT
2225C	HP	DSI16XU2225	PRINTER	NOTEBOOK PC
020-0470	CARDINAL	GDE0196	MODEM	NOTEBOOK PC
UM520	SARAM & COMPUTER	DOC	MOUSE	NOTEBOOK PC
N/A	N/A	N/A	HEADSET	EUT
CK-2702S	JUNG PHOONG	N/A	TELEPHONE	EUT
DPX-482412	Helms-Man Industrial Co., Ltd.	N/A	AC/DC ADATPER	EUT

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 12, 1999. (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 BOARD	INTELLIX CORP., LTD.	N/A	N/A
LCD BOARD	PHICO	N/A	N/A

3.2 EUT exercise Software

The each ports of the EUT was connected to the each port of peripherals. For the USB port, the personal computer was connected using USB cable, telephone port was connected to the telephone and line port was connected to PSTN line and then EUT was operated as following 2 modes for getting maximum emission levels from the EUT.

1) Data were transmitted and received via line for fax communication mode

2) Dara were transferred between EUT and PC by USB cable.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
Multi-functional Speakerphone (EUT)	N	Y	1.5(P), 1.2(D)
NOTEBOOK PC	N	-	1.5(P)
PRINTER	N	N	1.5(P), 1.2(D)
MODEM	N	N	1.5(P), 1.2(D)
MOUSE	N/A	N	1.5(D)
TELEPHONE	N/A	N	1.5(D)
HEADSET	N/A	N	1.5 (D)

* The marked “(P)” means the Power Cable, “(D)” means the Data cable.

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3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
Multi-functional Speakerphone (EUT)	N	N/A	Y	BOTH END
NOTEBOOK PC	Y	PC END	-	-
PRINTER	N	N/A	Y	BOTH END
MODEM	N	N/A	Y	BOTH END
MOUSE	N	N/A	Y	PC END
TELEPHONE	N	N/A	N	N/A
HEADSET	N	N/A	Y	EUT END
AC/DC ADAPTER	N	N/A	Y	EUT END

3.5 Equipment Modifications

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

1. Added a bead at phone line on the main board.
2. Added a bead at data line of inside connector on the main board.
3. Added a bead at local phone on the main board
4. Added a bypass ceramic capacitor 68pF between address bus lines and ground at CPU on the main board.
5. Added a bead at signal line of headset jack on the main board.
6. Added series resistance 22 ohm at USB data lines on the main board.
7. Added series resistance 22 ohm at CPU data bus lines on the main board.

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3.6 Configuration of Test System

Line Conducted Test: The adapter of the EUT was 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)
FAX Communication Mode	
Continuously transferring data between PC and EUT	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
FAX Communication Mode	
Continuously transferring data between PC and EUT	X

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5. FINAL RESULT OF MEASURMENT

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 : 57 % Temperature : 26•

Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107

Type of Test : CLASS B

Result : PASSED BY –16.4 dB at 0.45 MHz

EUT : Multi-functional Speakerphone Date: October 17, 2000

Operating Condition : Continuously transferring data between PC and EUT

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)**
0.45	31.58	N	48.00	-16.42
0.52	29.44	N	48.00	-18.56
0.60	28.62	N	48.00	-19.38
0.71	27.48	N	48.00	-20.52
1.55	26.63	N	48.00	-21.37
15.09	27.42	N	48.00	-20.58
20.00	24.11	H	48.00	-23.89

Line Conducted Emission Tabulated Data

Measuring by: Young Min, Choi / Project Engineer

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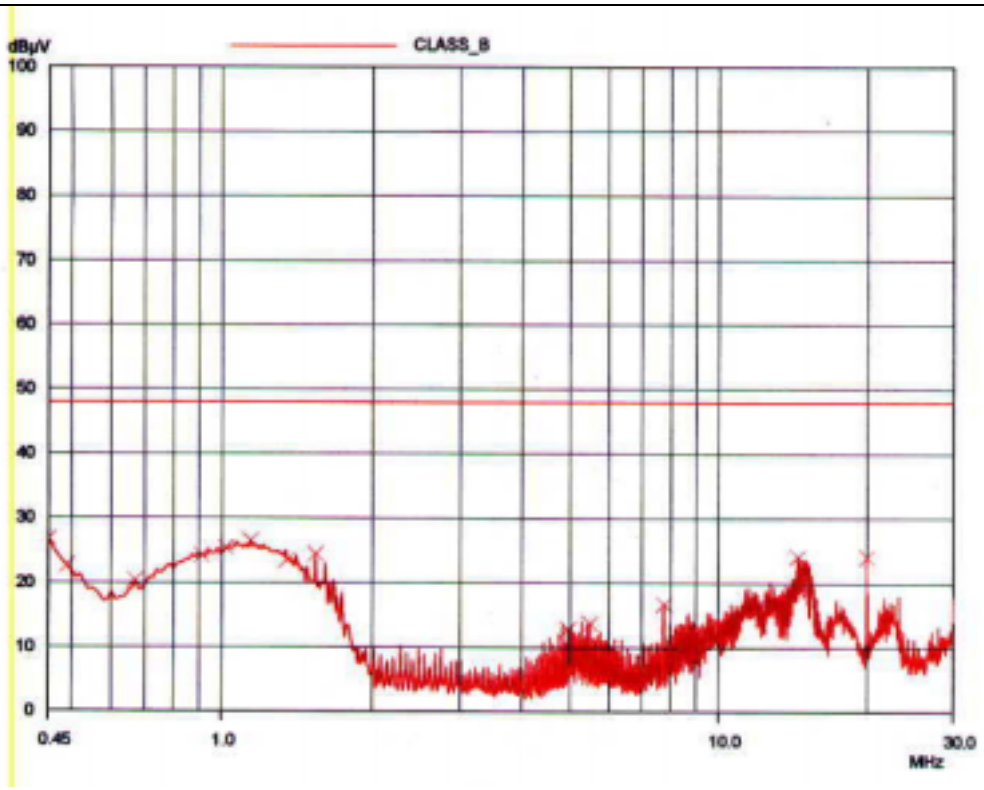

HOT LINE

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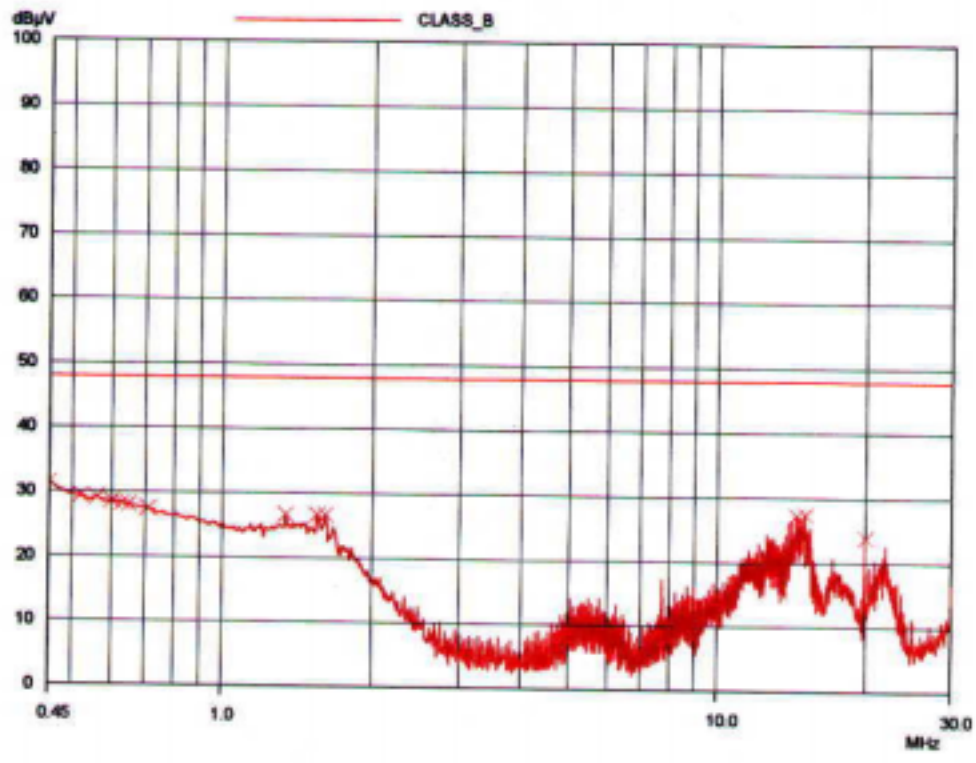

NEUTRAL LINE

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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 : 56 % Temperature : 27•
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109
Type of Test : CLASS B
Result : PASSED BY –4.7 dB at 139.97 MHz

EUT : Multi-functional Speakerphone Date: October 17, 2000
Operating Condition : Continuously transferring data between PC and EUT
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
Distance : 3 Meter

Radiated Emission		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)
79.95	25.80	V	6.33	1.00	33.13	40.00	-6.87
119.90	16.90	H	13.33	1.23	31.46	43.50	-12.04
129.98	20.00	V	13.00	1.26	34.26	43.50	-9.24
139.97	24.80	V	12.66	1.31	38.77	43.50	-4.73
150.05	18.40	V	13.40	1.35	33.15	43.50	-10.35
180.11	19.20	H	16.10	1.45	36.75	43.50	-6.75
209.80	20.70	H	11.69	1.62	34.01	43.50	-9.49
219.80	22.70	H	11.86	1.67	36.23	46.00	-9.77
229.80	19.10	H	12.03	1.72	32.85	46.00	-13.15
240.00	23.50	H	12.20	1.78	37.48	46.00	-8.52
260.00	21.10	H	13.07	1.85	36.02	46.00	-9.98
340.40	16.50	V	15.20	2.23	33.93	46.00	-12.07

Radiated Emission Tabulated Data

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Measuring 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)

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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	SEP/00	12MONTH	■
2.	Test receiver	R/S	ESHS10	834467/007	APRIL/00	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3026A0226	SEP/00	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	SEP/00	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	SEP/00	12MONTH	■
6.	Dipole Antenna	EMCO	3121C	9107-745	JUN/00	12MONTH	
7.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	MAR/00	12MONTH	■
8.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	MAR/00	12MONTH	■
9.	LISN	EMCO	3825/2	9109-1867 9109-1869	FEB/00	12MONTH	■
10.	RF Amplifier	HP	8447F	3113A04554	JUN/00	N/A	
11.	Spectrum Analyzer	HP	8591A	3131A02312	APR/00	12MONTH	
12.	Computer System Hard disk drive	HP	98581C 9153C	98543A CMC762Z9153	N/A N/A	N/A N/A	■ ■
13.	Plotter	HP	7475A	30052 22986	N/A	N/A	■
14.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
15.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
16.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■

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