



## ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

Test report file number : E011R-033

Applicant : LOOK & SAY CO., LTD.

Address : 5F., Donghun Bldg., 733-22, Yeoksam-Dong, Kangnam-Gu, Seoul, 135-080, Korea

Manufacturer : LOOK & SAY CO., LTD.

Address : 5F., Donghun Bldg., 733-22, Yeoksam-Dong, Kangnam-Gu, Seoul, 135-080, Korea

Type of Equipment : USB PC CAMERA (Peripheral Device for Class B Computing Device)

FCC ID : PGK-P32NB

Model / Type No. : LS-P32NB

Serial number : N/A

Total page of Report : 13 pages (including this page)

Date of Incoming : December 09, 2000

Date of Issuing : January 26, 2001

### SUMMARY

The equipment complies with the regulation; FCC PART 15 SUBPART B, SECTION 15.101

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:

  
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EMC Dept.  
ONETECH Corp.

Approved by:

  
S. S. Hong / Managing Director  
ONETECH Corp.



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## 1. VERIFICATION OF COMPLIANCE

APPLICANT : LOOK & SAY CO., LTD.  
 ADDRESS : 5F., Donghun Bldg., 733-22, Yeoksam-Dong, Kangnam-Gu, Seoul, 135-080, Korea  
 CONTACT PERSON : Mr. Han-Won, Jo / President  
 TELEPHONE NO : +82-2-3453-6737  
 FCC ID : PGK-P32NB  
 MODEL NO/NAME : LS-P32NB  
 SERIAL NUMBER : N/A  
 DATE : January 26, 2001

|                                                         |                                                                            |
|---------------------------------------------------------|----------------------------------------------------------------------------|
| DEVICE TYPE                                             | Peripheral Device for Class B Computing Device<br>- Unintentional Radiator |
| E.U.T. DESCRIPTION                                      | USB PC CAMERA                                                              |
| THIS REPORT CONCERNS                                    | ORIGINAL GRANT                                                             |
| MEASUREMENT PROCEDURES                                  | ANSI C63.4/1992                                                            |
| TYPE OF EQUIPMENT TESTED                                | PRE-PRODUCTION                                                             |
| KIND OF EQUIPMENT<br>AUTHORIZATION REQUESTED            | CERTIFICATION                                                              |
| EQUIPMENT WILL BE OPERATED<br>UNDER FCC RULES PART(S)   | FCC PART 15, SECTION 15.101 (Class B)                                      |
| MODIFICATIONS ON THE EQUIPMENT<br>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 LOOK & SAY CO., LTD., Model LS-P32NB (referred to as the EUT in this report) is a USB PC CAMERA which can support video communications and other applications. Product specification described herein was obtained from product data sheet or user's manual.

|                                              |                      |
|----------------------------------------------|----------------------|
| CHASSIS TYPE                                 | Plastic              |
| LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz) | 14.318 MHz           |
| POWER REQUIREMENT                            | DC 5V, 750mW from PC |
| NUMBER OF LAYERS                             | 4 Layers             |
| EXTERNAL CONNECTOR                           | USB Port             |

Model Differences:

-. The difference(s) compared to the EUT is as follows: 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 |
|----------|-----------------------|------------|---------------------|--------------|
| LS-P32NB | LOOK & SAY CO., LTD.  | PGK-P32NB  | USB PC CAMERA (EUT) | PC           |
| ADP-50SB | ASUSTEK COMPUTER INC. | N/A        | AC/DC ADAPTER       | EUT          |
| Emotion  | Trigem Computer, Inc. | DOC        | NOTEBOOK PC         | -            |
| 2225C    | HP                    | DSI6XU2225 | PRINTER             | PC           |
| 020-0470 | CARDINAL              | GDE0196    | MODEM               | 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 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 B'D     | LOOK & SAY CO., LTD. | N/A               | N/A    |
| SENSOR BOARD | LOOK & SAY CO., LTD. | N/A               | N/A    |

#### 3.2 EUT exercise Software

The image of PC camera was continuously displayed on the screen of monitor.

#### 3.3 Cable Description

|                     | Power Cord<br>Shielded (Y/N) | I/O cable Shielded<br>(Y/N) | Length (M)      |
|---------------------|------------------------------|-----------------------------|-----------------|
| USB PC CAMERA (EUT) | N/A                          | Y                           | 1.8(D)          |
| AC/DC ADAPTER       | N                            | N                           | 1.5(P), 1.2(D)  |
| NOTEBOOK PC         | N                            | -                           | 1.5(P)          |
| MODEM               | N                            | Y                           | 1.5(P), 1.5(D)  |
| PRINTER             | N                            | Y                           | 1.5(P), 1.5 (D) |

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

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### 3.4 Noise Suppression Parts on Cable

|                     | Ferrite Bead<br>(Y/N) | Location        | Metal Hood<br>(Y/N) | Location           |
|---------------------|-----------------------|-----------------|---------------------|--------------------|
| USB PC CAMERA (EUT) | Y                     | NOTEBOOK PC END | Y                   | NOTEBOOK PC<br>END |
| AC/DC ADAPTER       | Y                     | NOTEBOOK PC END | Y                   | NOTEBOOK PC<br>END |
| NOTEBOOK PC         | -                     | -               | -                   | -                  |
| MODEM               | N                     | N/A             | Y                   | BOTH END           |
| PRINTER             | N                     | N/A             | Y                   | BOTH END           |

### 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 a PC and the power line of PC 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.

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#### 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) |
|-----------------------------------------------------------------------------|-------------------------------------------------------|
| The image of PC camera was continuously displayed on the screen of monitor. | 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) |
|-----------------------------------------------------------------------------|-------------------------------------------------------|
| The image of PC camera was continuously displayed on the screen of monitor. | 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 : 55 % Temperature : 18 °C  
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107  
 Type of Test : CLASS B  
 Result : PASSED BY -12.31 dB at 1.47 MHz

EUT : USB PC CAMERA Date: December 29, 2000  
 Operating Condition : The image of PC camera was continuously displayed on the screen of monitor.  
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

| Power Line Conducted Emission |                     |           | FCC CLASS B     |                |
|-------------------------------|---------------------|-----------|-----------------|----------------|
| Frequency<br>(MHz)            | Amplitude<br>(dBuV) | Conductor | Limit<br>(dBuV) | Margin<br>(dB) |
| 1.47                          | 35.69               | NEUTRAL   | 48.00           | -12.31         |
| 1.54                          | 31.21               | HOT       | 48.00           | -16.79         |
| 4.95                          | 27.61               | HOT       | 48.00           | -20.39         |
| 5.35                          | 32.31               | NEUTRAL   | 48.00           | -15.69         |
| 11.70                         | 32.45               | NEUTRAL   | 48.00           | -15.55         |
| 12.11                         | 34.04               | HOT       | 48.00           | -13.96         |

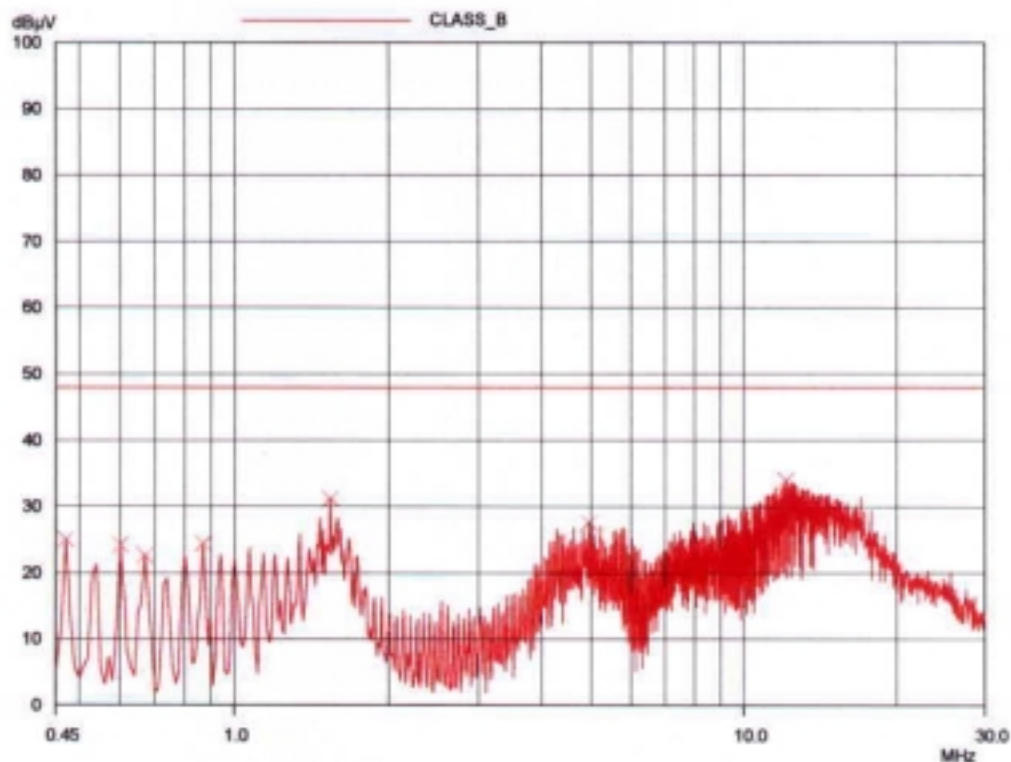
Line Conducted Emission Tabulated Data

Measuring by: Seung Hyun, Nam / Test Engineer



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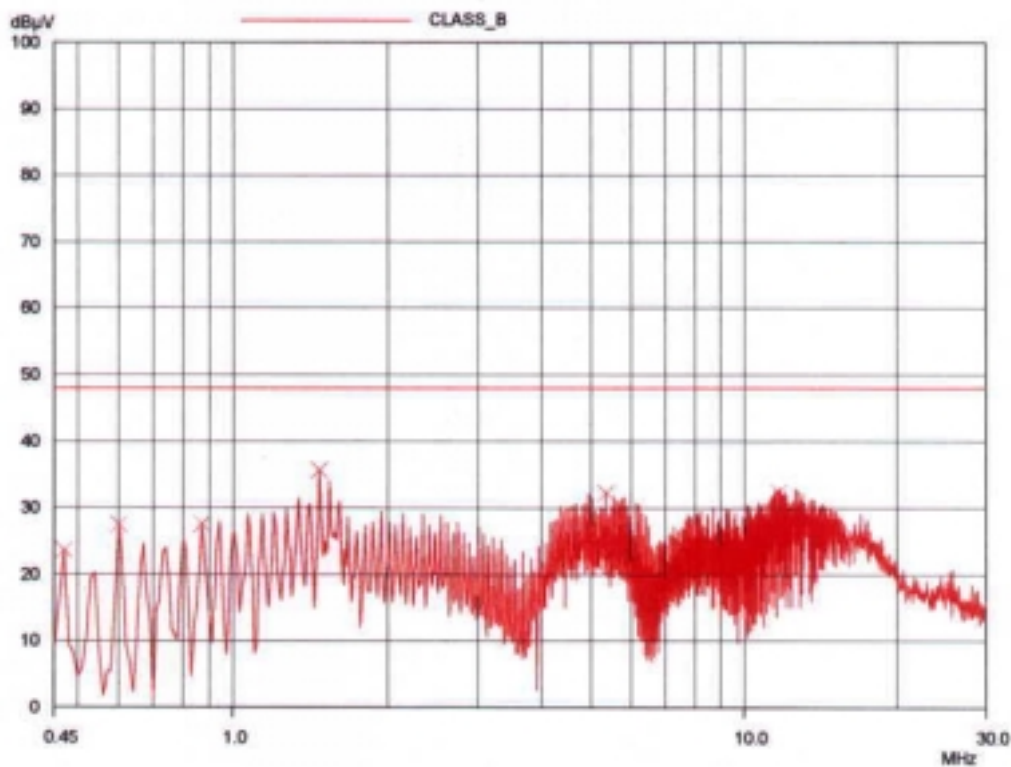
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## HOT LINE



## NEUTRAL LINE

**EMC Testing Dept** : 426-1 Daeangyong-Ri, Chonwol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL:82-31-765-8289 FAX:82-31-766-2904)



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Measuring by: Seung Hyun, Nam / Test 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)

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= 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<br>9109-4443<br>9109-4444 | MAR/00   | 12MONTH | ■   |
| 8.  | Log Periodic antenna | EMCO | 3146      | 9109-3213<br>9109-3214<br>9109-3217 | MAR/00   | 12MONTH | ■   |
| 9.  | LISN                 | EMCO | 3825/2    | 9109-1867<br>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      | HP   | 98581C    | 98543A                              | N/A      | N/A     | ■   |
|     | Hard disk drive      |      | 9153C     | CMC762Z9153                         | 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     | ■   |