

FCC EVALUATION REPORT FOR CERIFICATION

KOREA Standard Technology

Test report No.: KST-FCC0605

Applicant's Name : Seorim Technology Co., Ltd.

Applicant's Address : 1001 Daerung-Technology 6 , 493-6, Gasan-Dong,
Kumchun-Gu, Seoul, Korea

Manufacturer's Name : Seorim Technology Co., Ltd.

Manufacturer's Address : 1001 Daerung-Technology 6 , 493-6, Gasan-Dong,
Kumchun-Gu, Seoul, Korea

EUT's:

FCC ID : RBGSVG3410

Product Name : VisualGate

Model Number(s) : SVG3410

Product Options : N/A

Category : FCC Part 15 subpart B

Class B Computing Digital Device

Supplementary Information

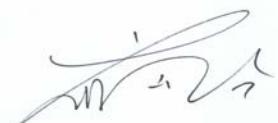
The device bearing the brand name and FCC ID specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with measurement procedures specified in ANSI C63.4-2003.

I attest to the accuracy of data and all measurements reported herein were performed by or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Test Date : February 6, 2006

Issued Date : February 8, 2006

Tested by:



Choi, Jae-Rak

Approved by:



Lee, Weon-Woo



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1. Description of Device

1) Kind of equipment: VisualGate
2) FCC ID: RBGSGV3410
3) Model Name: SVG3410
4) Serial No.: None
5) Type of Sample Tested: Pre-production
6) High Frequency Used: 25.000 MHz, 10.000 MHz, 24.000 MHz, 54.000 MHz
7) Adapter Model name : HASU11FB36
Manufacturer : HUA JUNG COMP. CO., LTD.
Serial no : 41006701394
9) Power : INPUT: 100-240 V, 50/60 Hz, 1.5 A
OUTPUT: 12.0 V, 3.0 A
9) Tested Power supply: 1phase AC120 V, 60 Hz
12) Date of Manufacture: November, 2005
13) Manufacture: Seorim Technology Co., Ltd.
14) Dates of Test: February 6, 2006
15) Place of Tests: KOSTEC CO., LTD. EMC site
16) Test Report No: KST-FCC0605



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2. Test Facility

The open field test site and conducted measurement facility are used for these testing, where are located following address and drawing. This site was fully described in a report dated November 14, 2002, that was submitted to the FCC.

KOSTEC CO., LTD. (Korea Standard Technology)

Head office & Test Lab :

:180-254, Annyung-Ri, Taean-Yup, Hwasung-shi, Gyeonggi-do, Korea

Telephone Number : 82-31-222-4251

Facsimile Number: 82-31-222-4252

MIC(Ministry of Information and Communication) Number: **KR0041**

FCC Filing Number. : **525762**

VCCI Membership Number : **2005**

VCCI Registration Number : **R-1657 / C-1763**



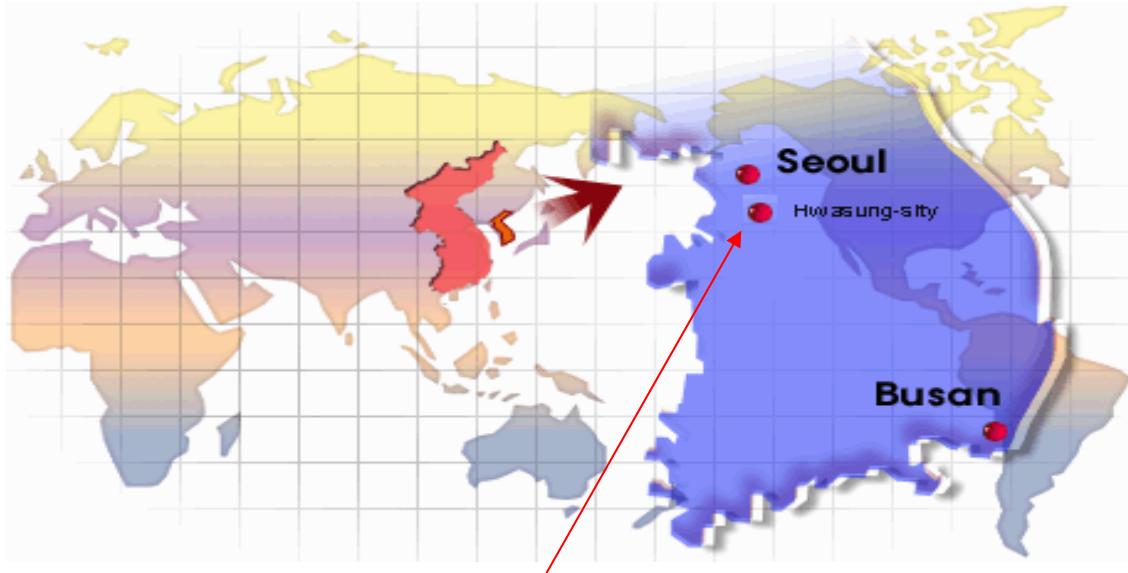
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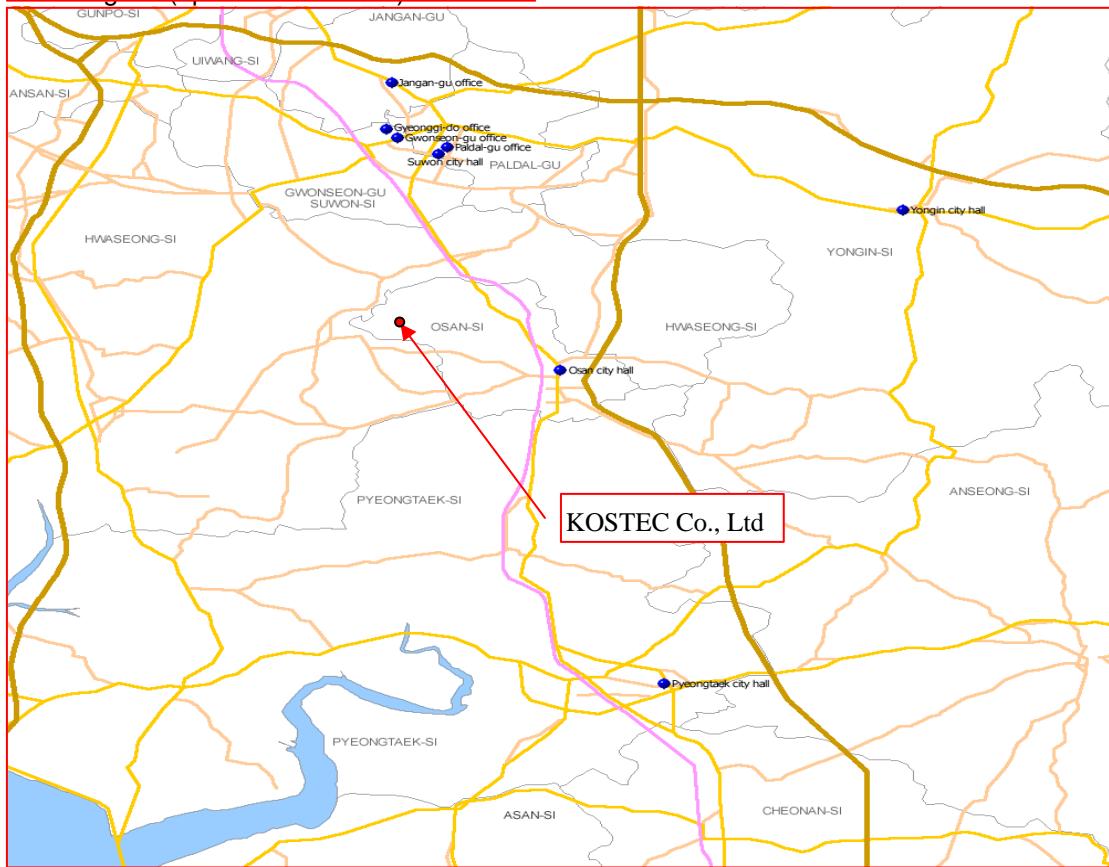


3. Route Map of Measurement Facility

Korea



Hwasung-si (open area test site)



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4. Test System Configuration

Operation Environment

| | <u>Temperature</u> (°C) | <u>Humidity</u> (%) | <u>Pressure</u> (hPa) |
|---------------------|------------------------------|--------------------------|-------------------------|
| Ambient | | | |
| 10 m Open Area site | -2 | 43 | 1018 |
| Shielded room: | 20 | 32 | 1018 |

Test site

These testing were performed following locations ;

Shielded room : Conducted Emission,

10 m Open Area Site: Radiated Emission

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC.

The factors contributing to uncertainties are test receiver, Cable loss, antenna factor calibration, Antenna directivity, antenna factor variation with height, antenna phase center variation, antenna frequency interpolation, measurement distance variation, site imperfection, mismatch, and system repeatability.

Based on NIS 80, 81, The measurement uncertainty level with a 95% confidence level were applied.

sample calculation

Conducted emission

The field strength is calculated by adding the LISN factor, cable loss from the measured reading.

The sample calculation is as follows:

$$FS = MR + LF + CL$$

MR = Meter Reading

LF = LISN Factor

CL = Cable Loss

If MR is 30 dB, LISN Factor 1 dB, CL 1 dB

The result (MR) is

$$30 + 1 + 1 = 32 \text{ dBuV}$$

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5. Description of E.U.T.

Product Description

| | |
|------------------|---|
| Manufactured By: | Seorim Technology Co., Ltd. |
| Address: | 1001 Daerung-Technology 6 , 493-6, Gasan-Dong, Kumchun-Gu, Seoul, Korea |
| Model: | SVG3410 |
| Serial Number: | None |

Configuration of EUT

| Description | Manufacturer | Model/Part # | Serial Number |
|----------------------|-----------------------------|--------------|---------------|
| Main controller | Seorim Technology Co., Ltd. | MTEK_CPU | None |
| SUB controller | Seorim Technology Co., Ltd. | MTEK_BARE | None |
| Video controller(x4) | Seorim Technology Co., Ltd. | None | None |
| | | | |

EUT Used cables

| Cable Type | Shield | Length (m) | Ferrite | Connector | Connection Point 1 | Connection Point 2 |
|---------------------|--------|------------|---------|-----------|--------------------|--------------------|
| 2Pin Terminal Block | Yes | 1.5 | - | DC INLET | AC/DC Adaptor | EUT |
| USB | - | - | - | USB | EUT | USB Memory |
| RJ-45 | - | 3.0 | - | UTP | EUT | Note Book |
| BNC | Y | 1.5 | - | BNC | EUT | CC Camera |
| Audio(IN) | Y | 2.5 | - | Jack | EUT | MIC |
| Audio(OUT) | y | 1.5 | - | Jack | EUT | Head Phone |
| | | | | | | |

Operating conditions

The operating mode/system were as follows in details:

Operating: After setting system, was tested on condition for that Note Book check the export situation to contact by IP addwess of EUT after connect the USB Memory on USB Port of EUT, and connect the Note Book on RJ-45 Port, and connect the PC Camera on BNC Port, and than connect the Head Phone and on Audio ports.

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7. TEST RESULTS

7.1 Conducted emission

Measurement procedure

Mains

The measurements were performed in a shielded room. EUT was placed on a non-metallic table height of 0.4 m above the reference ground plane. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane.

Each EUT power lead, except ground (safety) lead, were individually connected through a LISN to input power source.

Both lines of power cord, hot and neutral, were measured.

Used equipment

| Equipment | Model no. | Serial no. | Makers | Next cal date | Used |
|---------------|-----------|------------|--------|---------------|------|
| Test receiver | ESPI3 | 100109 | R&S | 2006.3.15 | ● |
| L.I.S.N. | ESH2-Z5 | 100044 | R&S | 2006.4.23 | ● |
| | ESH3-Z5 | 100147 | R&S | 2006.8.12 | ● |

Measurement uncertainty

Conducted Emission measurement : \pm 2.4 dB(K=2)

Test data

< Class B >

| FREQ. (MHz) | LEVEL(dB μ V) | | LINE POL | Loss (dB) | LIMIT(dB μ V) | | MARGIN(dB) | |
|----------------|-------------------|-------|-------------|--------------|-------------------|-------|------------|-------|
| | QP | AV | | | QP | AV | QP | AV |
| 0.166 | 49.13 | 36.32 | L | 0.29 | 65.16 | 55.16 | 16.32 | 19.13 |
| 0.470 | 37.91 | 34.35 | N | 0.29 | 56.51 | 46.51 | 18.89 | 12.45 |
| 0.630 | 33.55 | 28.90 | N | 0.90 | 56.00 | 46.00 | 23.35 | 18.00 |
| 0.766 | 34.29 | 29.16 | N | 0.43 | 56.00 | 46.00 | 22.14 | 17.27 |
| 7.362 | 42.39 | 38.61 | N | 1.20 | 60.00 | 50.00 | 18.81 | 12.59 |
| 8.786 | 41.01 | 34.61 | L | 1.24 | 60.00 | 50.00 | 20.23 | 16.63 |
| 13.270 | 39.52 | 33.56 | N | 1.61 | 60.00 | 50.00 | 22.09 | 18.05 |

* Level = test receiver reading value

* Loss = LISN insertion Loss + Cable Loss

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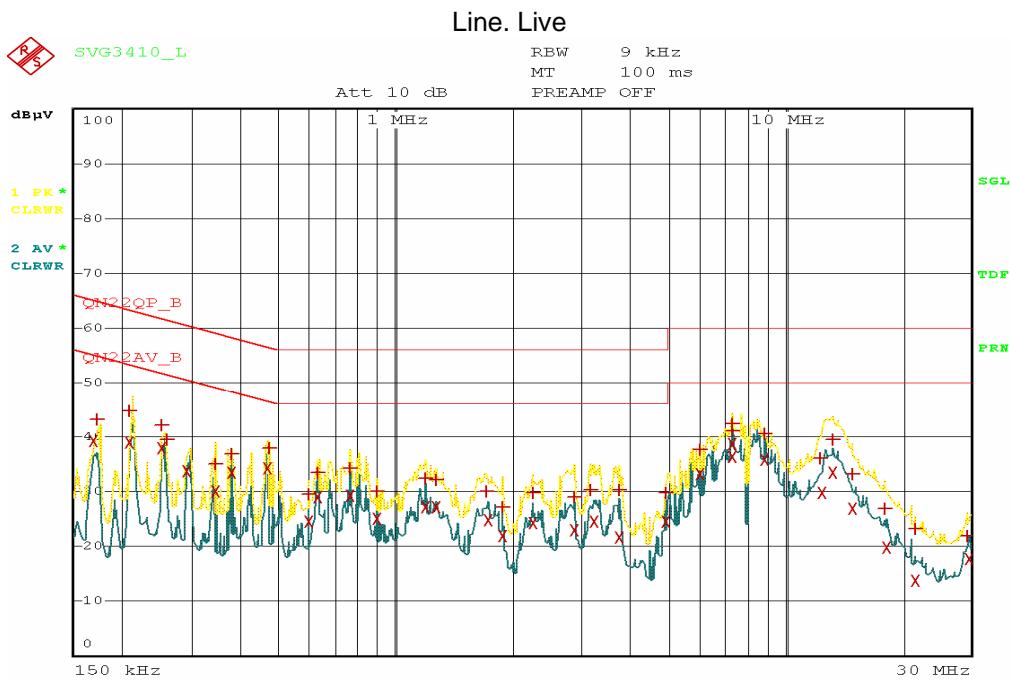


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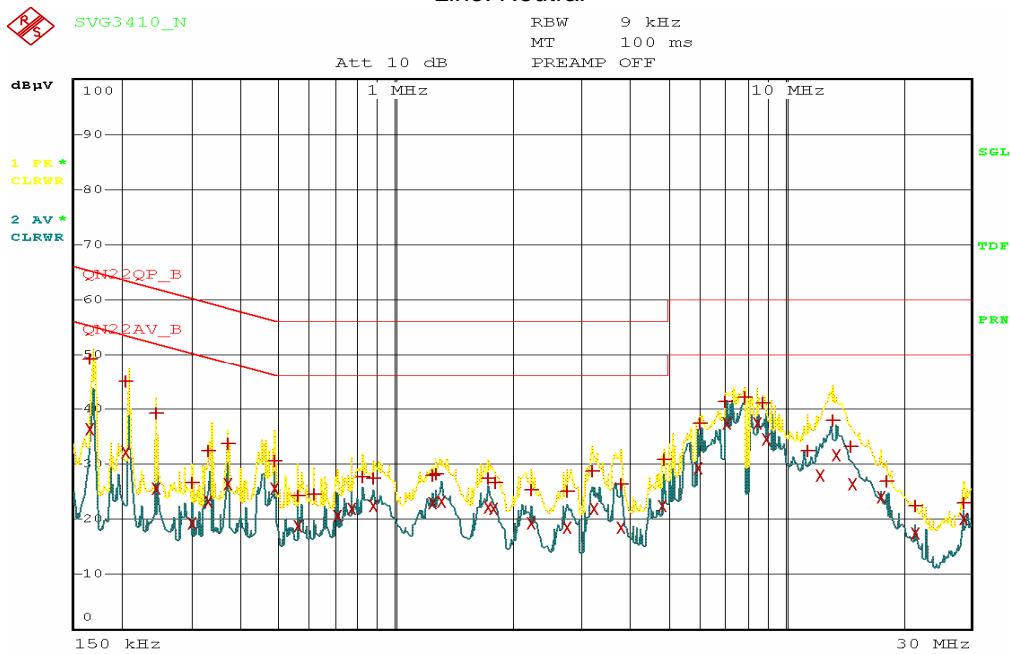
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Conducted emission test graph



Date: 6.FEB.2006 15:57:48

Line. Neutral



Date: 6.FEB.2006 15:54:04



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7.2 Radiated Emission Measurement procedure

A pretest was performed at 3 m distances in a semi-anechoic chamber for searching correct frequency. The final test was done at a 10 m open area test site with a quasi-peak detector. EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. Cables connected to EUT were fixed to cause maximum emission. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

Used equipment

| Equipment | Model no. | Serial no. | Makers | Next cal date |
|-------------------------|-----------|-------------|------------|---------------|
| Test receiver | ESCS30 | 100111 | R&S | 2006.3.17 |
| Ultra broadband antenna | HL562 | 100075 | R&S | 2006.3.16 |
| Matching network | RAM | 358.5414.02 | R&S | - |
| Antenna Mast | AT14 | none | Daeil EMC | - |
| Turn Table | TT15 | none | Daeil EMC | - |
| 10 m Open area site | none | none | KOSTEC Lab | - |
| chamber(3 m) | none | none | FRANCONIA | - |

Measurement uncertainty

Radiated Emission measurement :

30-300 MHz +3.96 dB / -4.04 dB

300-1000 MHz +3.04 dB / -3.00 dB

Test data

< Class B >

| Freq (MHz) | Reading (dBuV) | P (H/V) | H (m) | A (.) | Antenna (dB/m) | Cable Loss (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|------------|----------------|---------|-------|-------|----------------|-----------------|-----------------|----------------|-------------|
| 40.00 | 6.90 | H | 2.90 | 130 | 14.10 | 2.50 | 23.50 | 40.0 | 16.50 |
| 77.17 | 15.24 | H | 2.40 | 300 | 7.90 | 3.16 | 26.30 | 40.0 | 13.70 |
| 120.01 | 17.10 | V | 1.70 | 180 | 9.60 | 3.70 | 30.40 | 43.5 | 13.10 |
| 194.71 | 27.34 | H | 2.30 | 110 | 7.20 | 4.86 | 39.40 | 43.5 | 4.10 |
| 303.74 | 17.58 | H | 2.00 | 110 | 11.09 | 6.53 | 35.20 | 46.0 | 10.80 |
| 404.99 | 15.88 | H | 2.00 | 60 | 13.58 | 7.44 | 36.90 | 46.0 | 9.10 |
| 593.99 | 5.19 | H | 1.70 | 110 | 16.93 | 9.28 | 31.40 | 46.0 | 14.60 |
| 602.07 | 5.87 | V | 2.20 | 180 | 17.02 | 9.31 | 32.20 | 46.0 | 13.80 |

Reading = Test receiver reading / P= antenna Polarization / H=antenna Height

A=turn table Angle / Antenna = antenna factor / Cable loss = used cable loss

Result = reading + antenna + loss / Margin = Limit - result

* Receiving Antenna Mode: Horizontal, Vertical / * Test site: 3m Open area site

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