

**Signal Communications Ltd.**

Application  
For  
Certification  
**(FCC ID: NAGSCVT-010313)**

**TeleEye III Video Monitoring System**

April 11, 2001

WO# 0102817

Ben W. K. Ho/Sandy

April 11, 2001

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
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## LIST OF EXHIBITS

### *INTRODUCTION*

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## MEASUREMENT/TECHNICAL REPORT

**Signal Communications Ltd. - MODEL: TeleEye III VT3-4CA**

**TeleEye III VT3-4B**

**TeleEye III VT3-4C**

**TeleEye III VT3-4BA**

**FCC ID: NAGSCVT-010313**

**April 11, 2001**

This report concerns (check one:)      Original Grant X      Class II Change \_\_\_\_\_

Equipment Type: Computer Peripheral (example: computer, printer, modem, etc.)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?      Yes \_\_\_\_\_      No \_\_\_\_\_  
X

If yes, defer until: \_\_\_\_\_  
date

Company Name agrees to notify the Commission by: \_\_\_\_\_  
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37?      Yes \_\_\_\_\_      No \_\_\_\_\_  
X

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-1-96 Edition] provision.

Report prepared by:

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Intertek Testing Services  
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## List of attached file

Exhibit type	File Description	filename
Test Report	Test Report	report.doc
Operation Description	Technical Description	descri.pdf
Test Setup Photo	Radiated Emission	radiated1.jpg to radiated2.jpg
Test Setup Photo	Conducted Emission	conduct1.jpg to conduct3.jpg
Test Report	Conducted Emission Test Result	conduct.pdf
External Photo	External Photo	ophoto1.jpg to ophoto2.jpg
Internal Photo	Internal Photo	iphoto1.jpg to iphoto2.jpg
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf

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**EXHIBIT 1**

**GENERAL DESCRIPTION**

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## 1.0 General Description

### 1.1 Product Description

The Equipment Under Test (EUT) is a TeleEye III Video Monitoring System. The EUT is powered by AC 120V 60Hz input, DC 9V output adaptor. It is a video monitoring system which can transmit B/W video frames or color video frames from up to 4 video sources to PC through a RJ45 network cable. Also it has four alarm inputs and one switch output for control purpose.

Model Difference:

VT3-4B : Transmitting B/W video frames.

VT3-4C : Transmitting color video frames.

VT3-4BA : Transmitting B/W video frames with 4 alarm inputs and 1 output switch supported.

VT3-4CA : Transmitting color video frames with 4 alarm inputs and 1 output switch supported.

The hardware design of the four models above are the same. The alarm and switch function provided for the VT3-4B and VT3-4C will be permanently disabled in software but the function provided for the VTC3-4BA and VTC3-4CA will be permanently enabled in software. In short, there is only the software difference among the models above.

For electronic filing, the brief circuit description is saved a filename: descri.pdf.

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### **1.2 Related Submittal(s) Grants**

This is a single Application for Certification.

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### 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (1992). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. For each scan, the procedure for maximizing emissions in Appendices D and E were followed. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

### 1.4 Test Facility

The open area test site and conducted measurement facility used to collect the emission data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

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**EXHIBIT 2**

**SYSTEM TEST CONFIGURATION**

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### 2.0 **System Test Configuration**

#### 2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (1992.)

The EUT was powered from AC 120V 60Hz input, DC 9V output adaptor.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

#### 2.2 EUT Exercising Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, contained on a CD, was inserted into CD Drive and was installed into the harddisk.

Once the program was loaded, the camera can be controlled by using the mouse. For simplicity of testing, the unit was setted to move continuously.

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### **2.3 Special Accessories**

There are no special accessories necessary for compliance of this product.

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### 2.4 Equipment Modification

Any modifications installed previous to testing by Signal Communications Ltd. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services.

### 2.5 Support Equipment List & Description

Refer List:

1. HP COMPUTER: Model: D3397A  
S/N: SG54500246  
FCCID: K4UVECTRAVL5
2. HP MONITOR: Model: D2804A  
S/N: KR53185780  
FCCID: CSYSC-428VSP
3. HP MOUSE: Model: M-S34  
S/N: LCA53438640  
FCCID: DZL210582
4. HP KEYBOARD: Model: E03633QLUS  
FCCID: CIGE03614
5. HP PRINTER: Model: C2642A  
S/N: SG67B131RY  
FCCID: B94C2642X
6. 2 x 120V ac to 9V dc power adapters
7. NTSC Camera Model: AT&T PV Camera 200-NTSC
8. 9 pins Aux port cable (3m)\*
9. 4 x BNC cables (3m)\*
10. RJ45 LAN cable (3m)
11. 4 x  $75\Omega$  terminators
12. Software CD  
Name: Telewin
13. Alarm & SW cable (3m)\*
14. Alarm box
15. RS232 MINI-TESTER x 2
16. 9 pins to 25 pins converter x 2
17. HP Ethernet card
18. Modem port cable (3m)\*

\* They are shielded cables.

*Confirmed by:*

*Wilson Loke*  
Manager  
Intertek Testing Services  
Agent for Signal Communications Ltd.



Signature

April 11, 2001 Date

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**EXHIBIT 3**

**EMISSION RESULTS**

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### 3.0 **Emission Results**

Data included were result from worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs, data tables and graphical representations of the emissions are included.

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### 3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

where FS = Field Strength in dB $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

$$FS = RR + LF$$

where FS = Field Strength in dB $\mu$ V/m

RR = RA - AG in dB $\mu$ V

LF = CF + AF in dB

Assume a receiver reading of 52.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$RA = 52.0 \text{ dB}\mu\text{V}/\text{m}$$

$$AF = 7.4 \text{ dB} \quad RR = 23.0 \text{ dB}\mu\text{V}$$

$$CF = 1.6 \text{ dB} \quad LF = 9.0 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = RR + LF$$

$$FS = 23 + 9 = 32 \text{ dB}\mu\text{V}/\text{m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V}/\text{m})/20] = 39.8 \mu\text{V}/\text{m}$$

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### **3.2 Radiated Emission Configuration Photograph**

**Worst Case Radiated Emission**

**50.605 MHz**

For electronic filing, test configuration photographs are saved with filename:  
radiated1.jpg & radiated2.jpg

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### 3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 10.9 dB

### **TEST PERSONNEL:**



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*Tester Signature*

Ben W. K. Ho, Compliance Engineer  
*Typed/Printed Name*

April 11, 2001  
*Date*

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Company: Signal Communications Ltd.  
Model: TeleEye III VT3-4CA  
Mode: Color Mode

Date of Test: April 9, 2001

Table 1

## Radiated Emissions

Polarity	Frequency (M Hz)	Reading (dB $\mu$ V)	Antenna Factor (dB)	Pre-Amp Gain (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	40.010	33.0	11.7	16	28.7	40.0	-11.3
H	50.605	33.4	11.7	16	29.1	40.0	-10.9
H	60.180	35.1	9.9	16	29.0	40.0	-11.0
H	70.394	36.5	7.1	16	27.6	40.0	-12.4
H	80.703	36.7	6.7	16	27.4	40.0	-12.6
H	90.018	33.9	9.4	16	27.3	43.5	-16.2

Notes:

1. Peak Detector Data
2. No other harmonic or spurious were detected at a test distance of 3 meter.
3. Negative value in the margin column shows emission below limit.
4. Interconnecting cabling or wiring was connected to one of each type of functional port of the EUT, and each cable or wire was terminated in a device typical of actual usage. Additional connecting cables or wires were added to the EUT to determine the effect these cables or wires had on emissions from the EUT. The number of additional cables or wires were limited to the condition where the addition of another cable or wire did not significantly affect the emission level, i.e. varies less than 2 dB, provided that the emission level remains compliant. These additional cables or wires need not be terminated.

Test Engineer: Ben W. K. Ho

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### 3.4 Line Conducted Configuration Photograph

#### Worst Case Line-Conducted Configuration

0.45 MHz

For electronic filing, test configuration photographs are saved with filename: conduct1.jpg to conduct3.jpg.

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### 3.5 Line Conducted Emission Configuration Data

The data on the following page lists the significant emission frequencies, the limit, and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 9.3 dB

\* All readings are peak unless stated otherwise.

### **TEST PERSONNEL:**



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*Tester Signature*

Ben W. K. Ho, Compliance Engineer  
Typed/Printed Name

April 11, 2001  
Date

## INTERTEK TESTING SERVICES

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Company: Signal Communications Ltd.  
Model: TeleEye III VT3-4CA

Date of Test: April 9, 2001

### Graph 1

#### **Conducted Emissions Section 15.107 Requirements**

For electronic filing, the graph is saved with filename: conduct.pdf.

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Company: Signal Communications Ltd.  
Model: TeleEye III VT3-4CA

Date of Test: April 9, 2001

Table 2

**Conducted Emissions  
Section 15.107 Requirements**

For electronic filing, the table is saved with filename: conduct.pdf.

**EXHIBIT 4**

**EQUIPMENT PHOTOGRAPHS**

4.0 **Equipment Photographs**

For electronic filing, photographs of the tested EUT are saved with filename: ophoto1.jpg to ophoto2.jpg for external photo, and iphoto1.jpg to iphoto2.jpg for internal photo.

**EXHIBIT 5**

**PRODUCT LABELLING**

5.0 **Product Labelling**

For electronic filing, the FCC ID label and label location are saved with filename: label.pdf.

**EXHIBIT 6**

**TECHNICAL SPECIFICATIONS**

6.0 **Technical Specifications**

For electronic filing, block diagram and schematics of the camera control unit are saved with filename: circuit.pdf and block.pdf respectively.

**EXHIBIT 7**

**INSTRUCTION MANUAL**

7.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.