GKB Video Fire Detection System (VFDS™)

Fire Security Systems

Solution Introduction

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Making Security Easier.

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Part 1 - Introduction

1.1 Solution Information

Video Fire Detection System (VFDS™) - An Innovative Video Surveillance Solution for the Prevention of Fire Disaster

- Preempts fire-related disasters through detection of fire and smoke.
- Using standard analog video signals over existing video surveillance systems.
- Server auto-initiates actions which include automated alarms, SMS alerts, and video recording.

1.2 Target Application

Locations that are well-suited to video fire surveillance and the GKB VFDS™ system include:

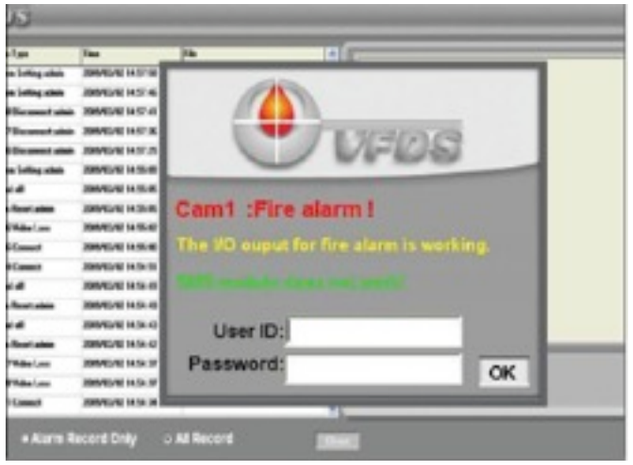
- Storage Facilities
- Warehouses
- Gas Stations
- Railway Stations
- Public Parks
- Factories
- Forests
- Tunnels
- Mining Sites
- Arsenals
- Military Bases
- Museums

1.3 Advantages of VFDS™ in fire security:

Rapid Fire and Smoke Detection for Open Spaces

- Detects weak smoke and flame within less than 20 seconds
- Detection achieved via highly sensitive, proprietary image inspection
- Well-suited for detection in large open-space areas and over longer distances
- Provides smoke, flame and fire detection capabilities not available from traditional smoke and fire alarms systems

1.3 Advantages of VFDS™ in fire security:



Active Notification on Fire and Smoke Detection

- Once smoke or fire is detected, the VFDS™ system signals detection via:
- On-screen display notification
- Networked alarms
- Short-Message-Service (SMS) to mobile phones.
- To prevent alarm failures,VFDS™ also sends notification if a loss of video signal is detected.
- Notification remains active as long as problem is still present.

1.3 Advantages of VFDS™ in fire security:

Compatible with Traditional Fire Panel Systems

- VFDS™ server can connect to traditional fire panels (e.g. FM 200) through a relay box

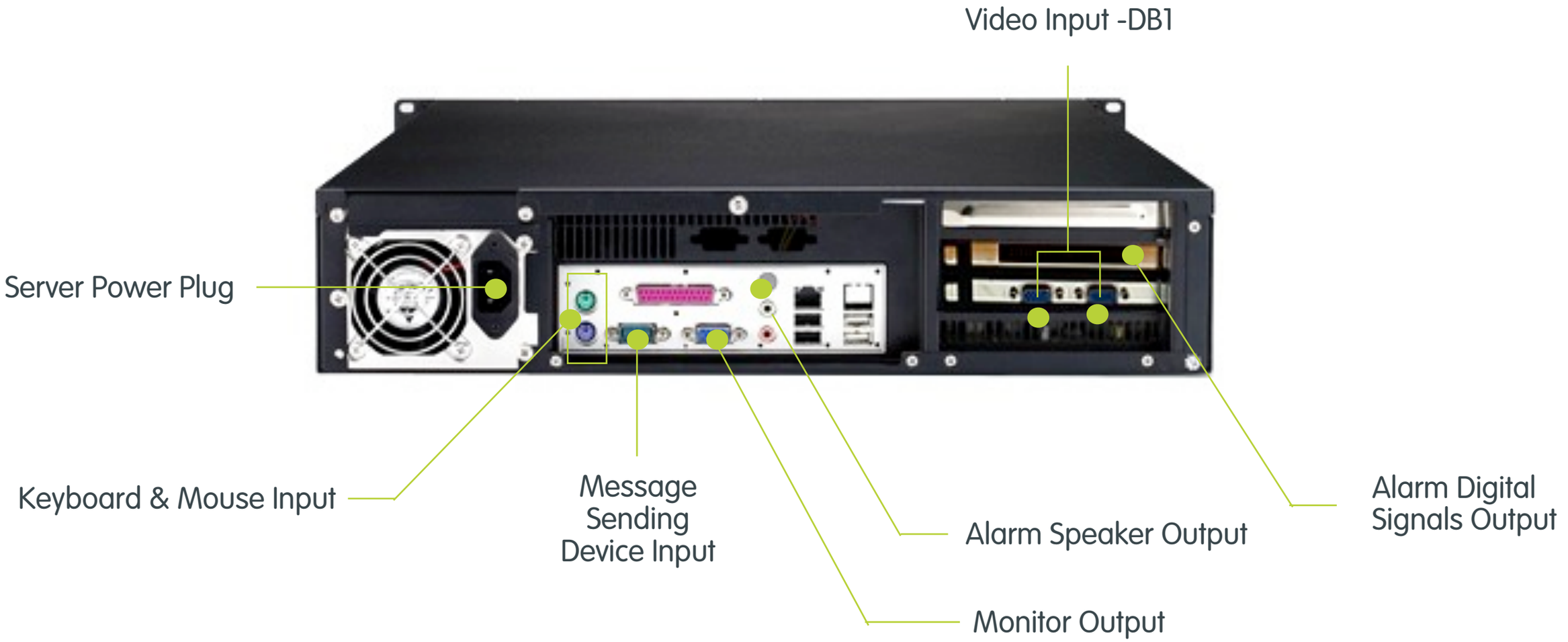
- VFDS™ system complements traditional fire and smoke detection systems, which can only detect heat and smoke in immediate surroundings or in closed-spaces.

1.4 Server Photos (Functions Highlight)

VFDS™ Server

1.4 Server Photos (Features Highlight)

VFDS™ Server



1.4 Server Photos (Features Highlight)

VFDS™ Console Server

No images (GKB to update when product is ready)

1.5 Solution Choices

Basic Solution

VFDS™ 8-channel server x 1

Relay box x 1

GKB surveillance cameras x 8

Video amplifier x 1

SMS message box x 1 (optional)

- A basic solution includes:
  - VFDS™ server with 8 video channels
  - 8 units of GKB surveillance camera with 3 types of camera selection
- Provided for smaller to medium fire security system needs

1.5 Solution Choices

Customize Solution
• VFDS™ console server x 1 • Support for up to 128 video channels

- A customize solution includes:
  - VFDS™ console server which support up to 16 VFDS™ servers
  - Support up to 128 units of GKB surveillance camera with 3 types of camera selection
- Provided for medium to large fire security system needs
- Available through consultation with GKB

1.6 Camera Options

GKB 1702VF	GKB 8602OS	GKB 3902
Weatherproof Camera with Infrared and Varifocal Auto-Iris Lens	High Resolution Box Camera with On-Board OSD	Vandalproof Dome Camera with Infrared and Varifocal Auto-Iris Lens
		
• Outdoor application • Preventing reflection of light with protective glass (optional) • Allowing operation at temperature between -40°C ~ +60°C with embedded heater (optional)	• Indoor application • Basic surveillance needs	• Indoor/Outdoor application • Area with highly risk of vandalism

- GKB VFDS™ system configures effortlessly with one of three GKB surveillance cameras.
- Cameras can be mixed and matched to meet the needs of each application.
- For more details, please refer the data sheets for each individual camera.

1.7 Specification

VFDS™ Console Server		
Console system		Support up to 16 VFDS™ server and 128 channels video

VFDS™ Server		
Management Setting		Administrator / General User
Detection	Event	Fire, Smoke and Video Loss
	Speed	Within 20 seconds
	Area	Max. 10 detect or non-detect areas selection each location
Video	Input	8-channel (NTSC/PAL)
	Compression	MPEG 4/JPEG
	Picture Size	20 * 20 pixels
	Resolution	320 * 240 pixels
Alarm	Output	24-channel (8-channel for fire, 8-channel for smoke and 8-channel for video loss).
	Setup	Sound alarm, Digital alarm (option), SMS alarm (option)
Cooling System	Fan	47 CFM each (* 2) ; 47 CFM each (* 2) + 28 CFM (* 1)
I/O Interface	USB	6 ports (2 front ports; 4 back ports)
	PS/2	2 ports for keyboard; 1 port for mouse
	Audio out	1 port for audio line
	VGA	1 port for monitor output
	RS - 232	1 port for message box
	Alarm Digital Signal Output	50-pin male ribbon-cable connector
	Min. Resolution	1280 * 1024 pixels
	Miscellaneous	9-pin D-sub openings reserved (x 1)

Operations	Temperature	0 ~ 40°C (32 ~ 104°F)
	Humidity	0 ~ 85% @ 40°C
	Vibration (5 ~ 500Hz)	1G
	Shock	10G (w/ 11 ms duration, half sine wave)
Power	Source	110V ~ 240V AC
	Consumption	150 W
Storage		220GB - 3.5" SAS/SATA HDD * 1
Internet Transmission		10M/100M, support RTP/IP, UDP/IP, TCP/IP
Cabinet		2U case
Dimension		482(W) * 88(H) * 480(D) mm
Weight		10.7 kg (23.5 lb)

Part 2 - Application and Function

2.1 Ideal Application

- VFDS™ system is an ideal solution for the preemption of fire disaster in:
  - outdoor areas
  - spacious indoor areas
  - areas with extreme temperatures
  - structures with ceiling heights over 30 meters
- Works in combination with pre-existing CCTV surveillance systems
- Operates with equal effectiveness during day and night

2.2 Functions

Software Management Interface:

Main Screen Display

- Provides important information on the status of the system, and access to other system functions
- Simultaneous display of up to 8 video feeds from different camera locations

2.2 Functions

Software Management Interface:

Setting and Configuration Page

- Provides access to configuration of
  - account
  - camera
  - detection
  - alarm message
  - digital I/O functions
- Gives flexibility in control and management of the system; features include:
  - assigning specific areas for detection
  - setting recording format
  - and setting for notifications sent when fire or smoke are detected

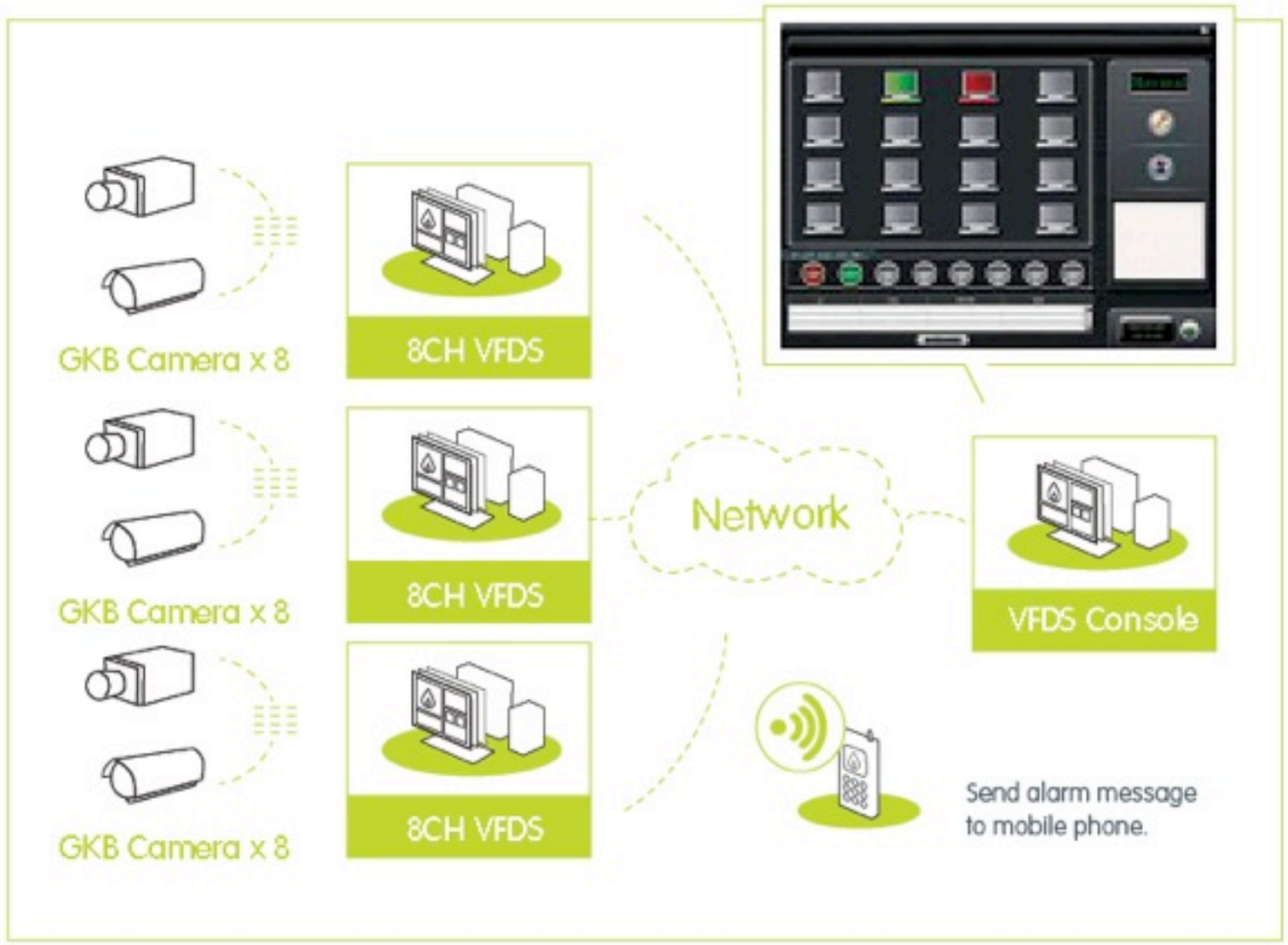
2.2 Functions

Software Management Interface:

Record Playback Page

- Provides file organization and playback for recorded events
- Automatically initiates recording when the system detects fire and smoke
- Stores video for later reference on the Record Playback Page.

2.2 System Diagram



- VFDS™ server can support up to 8 surveillance cameras.
- VFDS™ console server will be controlling up to 16 VFDS™ server and up to 128 surveillance cameras.

2.4 Packing Content

Basic Solution

- VFDS™ Server
- 8 units of Surveillance Camera
- Relay Box
- Video Amplifier
- Optional Universal Power System

Customize Solution

- VFDS™ Console Server
- 1-16 units of VFDS™ Server
- 1-128 units of GKB Surveillance Camera
- Optional equipment solutions available as required

2.5 Installation

Video Input -DB1

- Connection cables are provided for connecting with 8 surveillance cameras
- Blue connection cables are for connection with Video 1 ~ Video 4
- Green connection cables are for connection with Video 5 ~ Video 8
- Once connection is complete, configure the management setting from the monitor screen

2.6 Environmental Certification & Testing

CE FC RoHS ISO 9001:2000

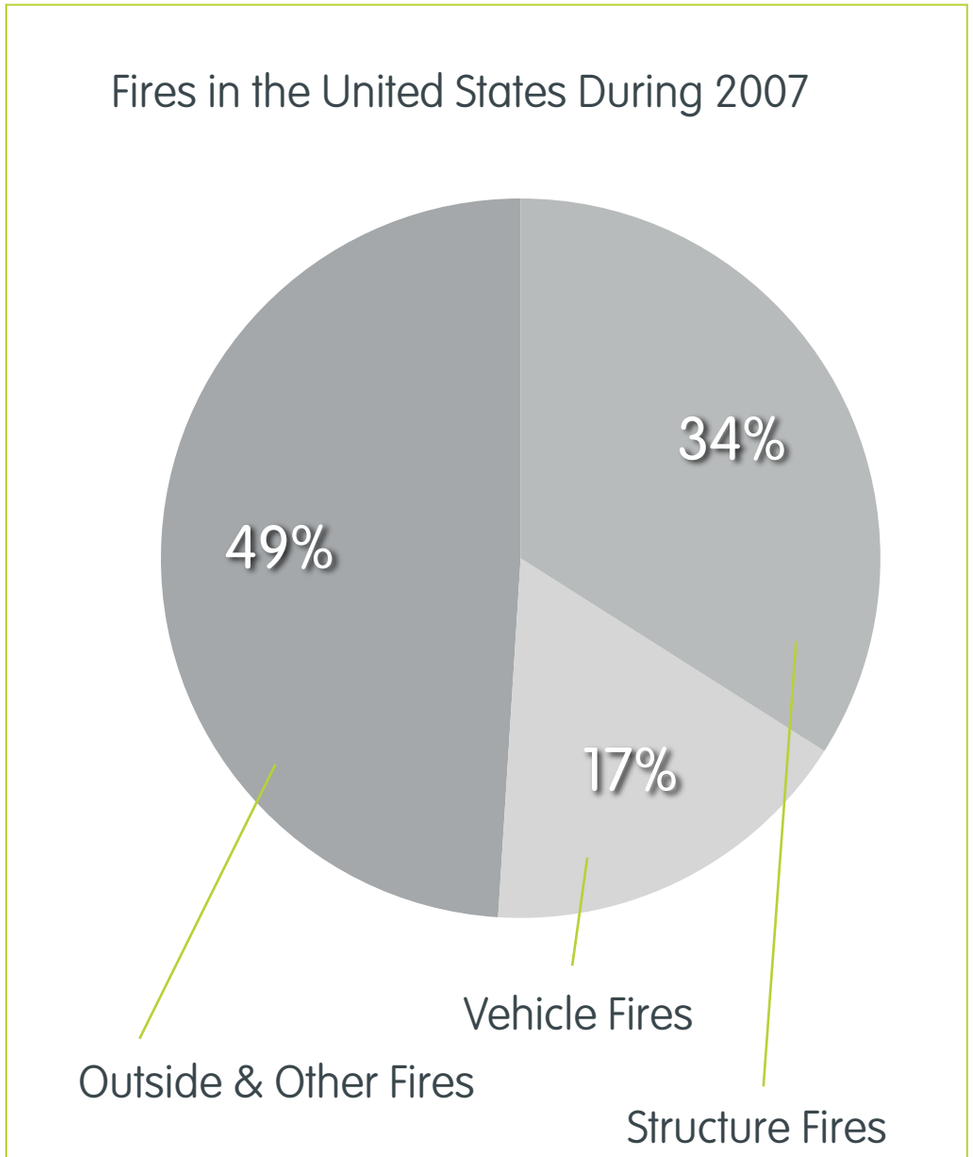
Part 3 - Support and Services

3.1 Current Situation

Over the last century, losses caused by fire, such as deaths, permanent injuries, property and environment damages have increased rapidly, despite advances in traditional fire alarm technology.

- According to the statistic provided by the National Fire Protection Association (NFPA)...
- 1,557,500 fires reported in the U.S. alone in 2007
  - causing 3,430 civilian deaths,
  - causing 17,000 civilian injuries
  - causing property damage worth $14.6 billion.

3.1 Current Situation



- From 1,557,500 fires reported in 2007, further analysis reveals that...
  - 34% are classified as structure fires (building)
  - 49% are categorized as open-space fires in outdoor areas such as parks, parkland, and forests
- While the causes for these fires vary, most damage is the result of an inability to respond before the fire gets out of control.

3.1 Current Situation

Responding to these challenges, GKB has developed a solution to reduce fire - related loss of life and property damage by making early stage fire and smoke detection more reliable and more ubiquitous.

In a different survey completed by the NFPA (2000 to 2004)...

- 22% of the deaths resulting from structure fires were due to the failure of smoke or fire alarms to operate.
- High percentage of smoke and fire alarms failures demonstrates the limitations of traditional fire detection technology.
- The inadequate to achieve early fire and smoke detection remained one of the major reasons fires caused such significant damage to person and property.

3.2 Customer Service

If you have further enquiries regarding this product or need technical support, please contact the nearest GKB local representatives for more information and assistance:

GKB Headquarter:

- Taichung, Taiwan

GKB has set up branch offices at:

- Chicago/USA
- Rotterdam/Holland (coming soon in Sept. 09)

3.3 Frequent Asked Questions

Q: Can I use non-GKB surveillance cameras with the GKB VFDS™ system?

A: GKB strongly recommends the use of GKB surveillance cameras with the GKB VFDS™ system. GKB Cameras have been to integrate seamlessly with the VFDS™ system. GKB can not guarantee that the use of surveillance cameras from other vendors will not result in system defects that impact the detection rate or result in false alarms.

3.3 Frequent Asked Questions

Q: Can I use an IP/Network camera with GKB VFDS™ system?

A: No. At this moment, the GKB VFDS™ system only works with GKB analog cameras. GKB is, however, planning the introduction of a IP/Network Camera fire security system by mid 2010.

Q: How can I connect the GKB VFDS™ system with an existing fire alarm system?

A: Yes. You can integrate any existing fire alarm system with the VFDS™ system via the digital output.

GKB Corporation

GKB is a global security solutions provider with a full range of user-friendly products, security solutions and support services designed to meet the needs of small and medium-sized system integrators and security installers.

For more information about this product, please visit us at www.gkbsecurity.com

GKB®

Thank You.