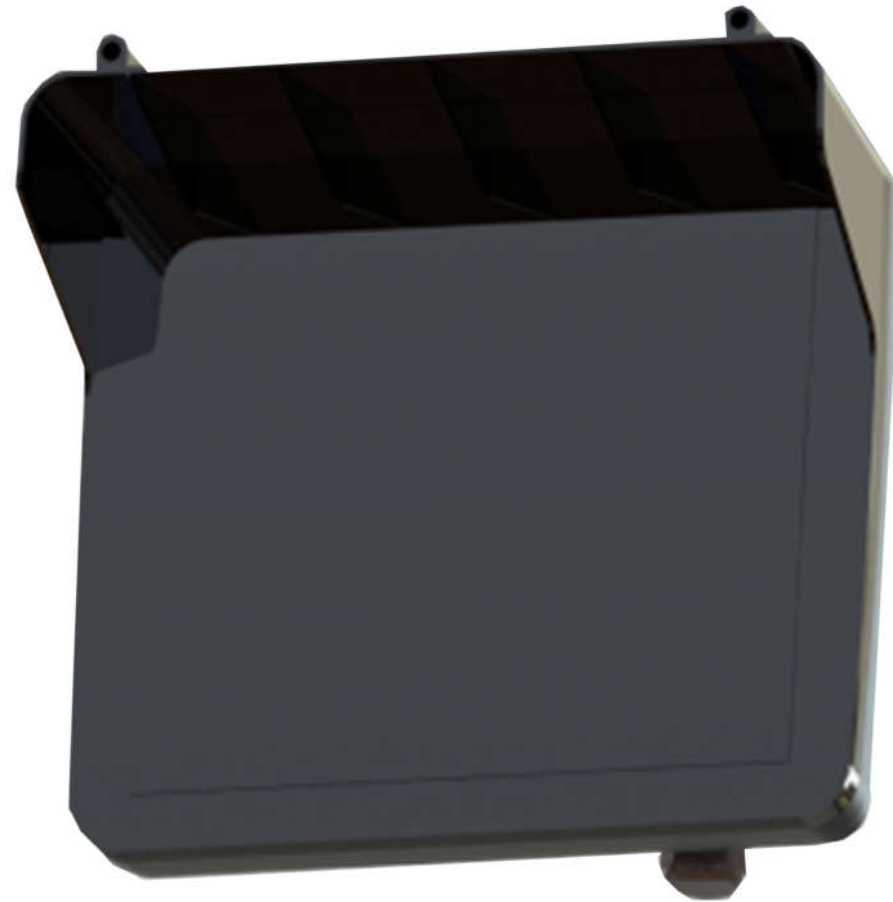




SV-100F

www.secu-vision.com

Radar Detector





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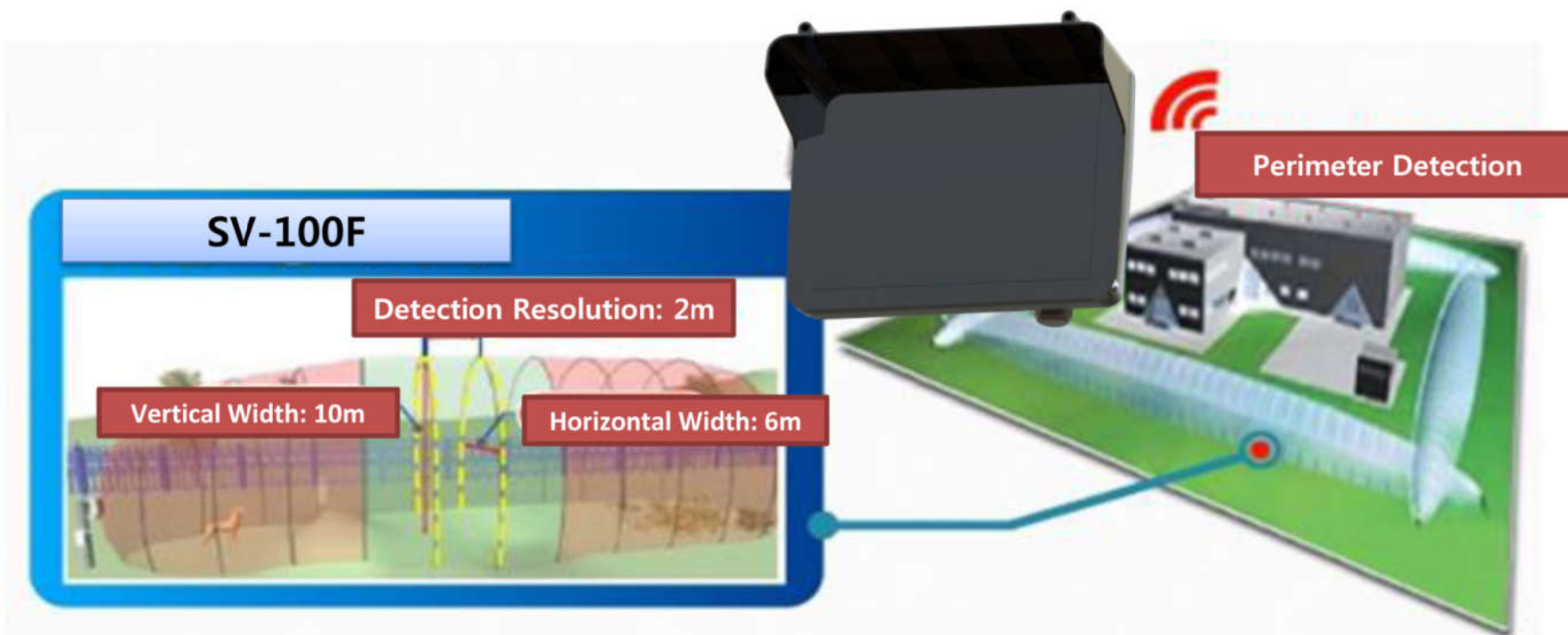
Detection Test

Case Studies and Advertisement



Introduction

- **Perimeter Detection for High-Profile Facilities or Plants**
(Maximum Detection Range; 100 meters)
- **Frequency Modulated Continuous Wave of 24GHz (ISM Band)**
- **Price Competitiveness with Performance (Low false alarm rates)**





Applications

✓ Airport, Jail, Plants, Factory, Oil Field, etc.



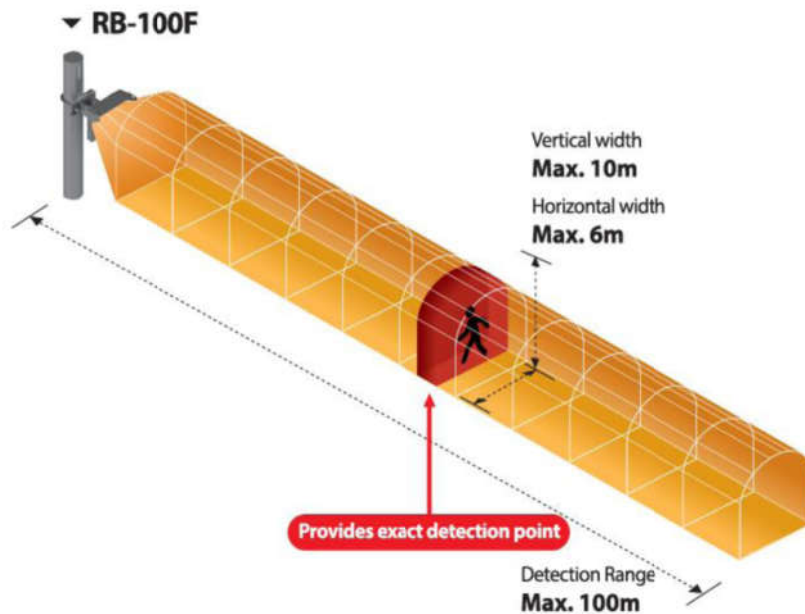
Specifications

Detection Method	FMCW (Frequency Modulated Continuous Wave)
Frequency	24.15GHz (24.06GHz ~24.24GHz)
Bandwidth	80MHz
Supply Voltage	DC 10V ~ DC 25V (Polarity)
Current	Below 150mA
Average Transmission Output (EIRP)	Below 20dBm
Installation Height	0.9m (0.8m~1.0m)
Intruder Detection Rate	More than 99% (Speed : 0.6m/s ~7.0m/s)
Pet Detection Rate	Less than 10% (Weight : 4kg)
Detecting Distance Unit	2m
Detection Accuracy	≤ 2 m
IP rate	IP65
Temperature	-40°C ~ 70°C
Dimensions	244.8 x 208.2 x 146mm
Weight	Max 2.5Kg



Function

Detection Range		3 ~ 100m (7~100m when Crawling)
Width	Horizontal	0.3 ~ 6m
	Vertical	10 m



Features

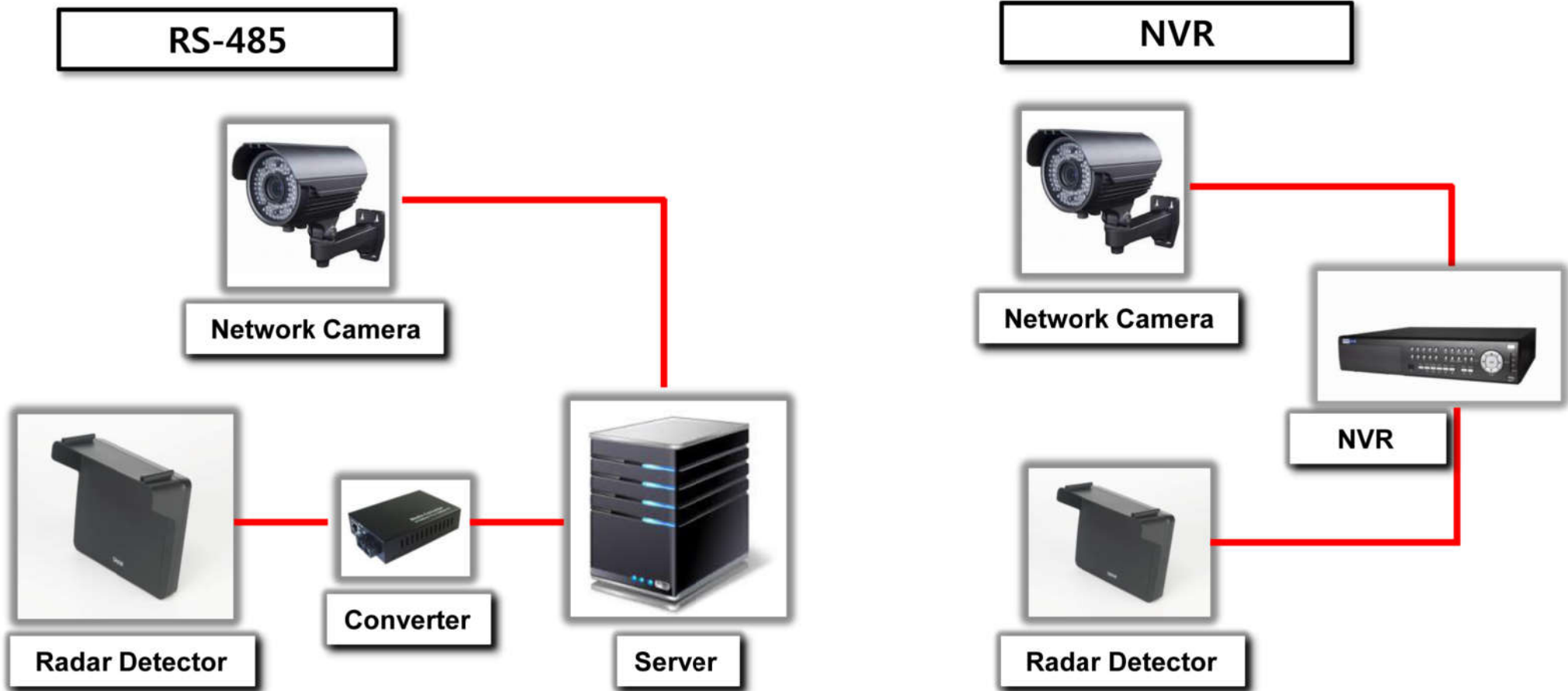
- ✓ High gain narrow beam antenna construction and dynamic pairing algorithm minimize false alarm against environmental variables (fog, rain, etc.)
- ✓ **Price competitive and low false alarm rate**
- ✓ Easy Installation (Monostatic)
- ✓ Sectional sensitivity adjustment function ensures optimum performance at various environments

Integration

- ✓ **Provides the detection distance information - RS485 communication**
 - ☞ **Enables VMS control by integrating with CCTV camera**
- ✓ **Detection range adjustment function**
 - ☞ **Installation at various environment**



VMS Integration

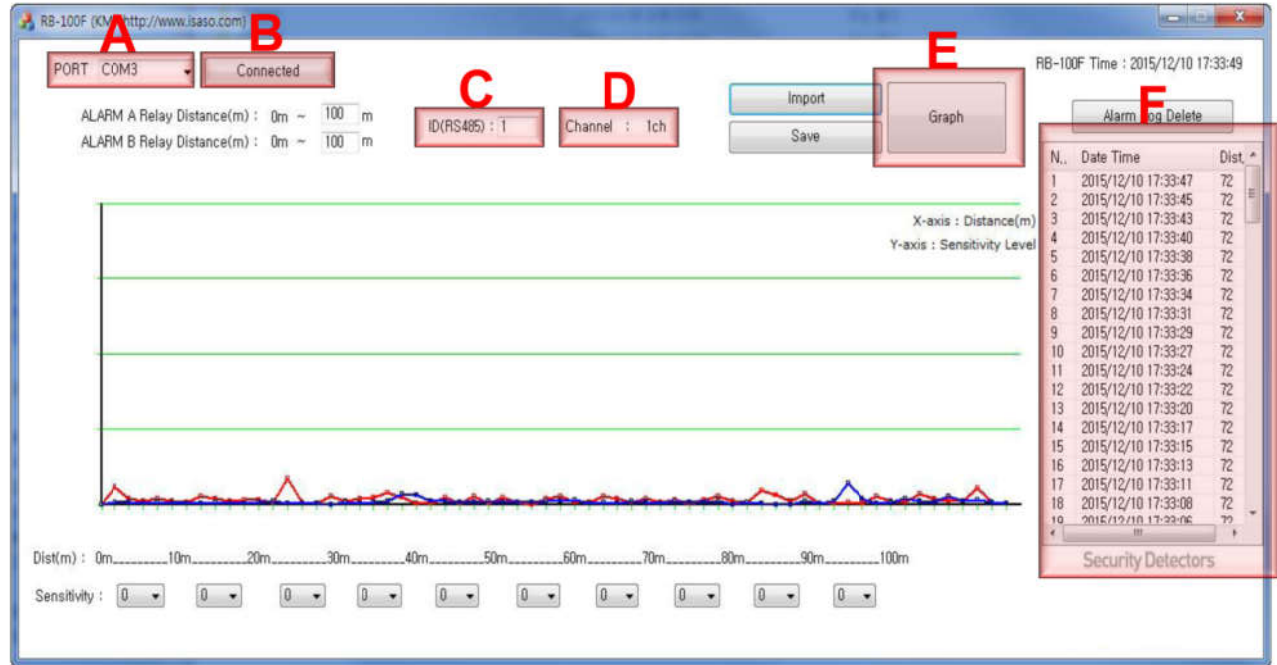
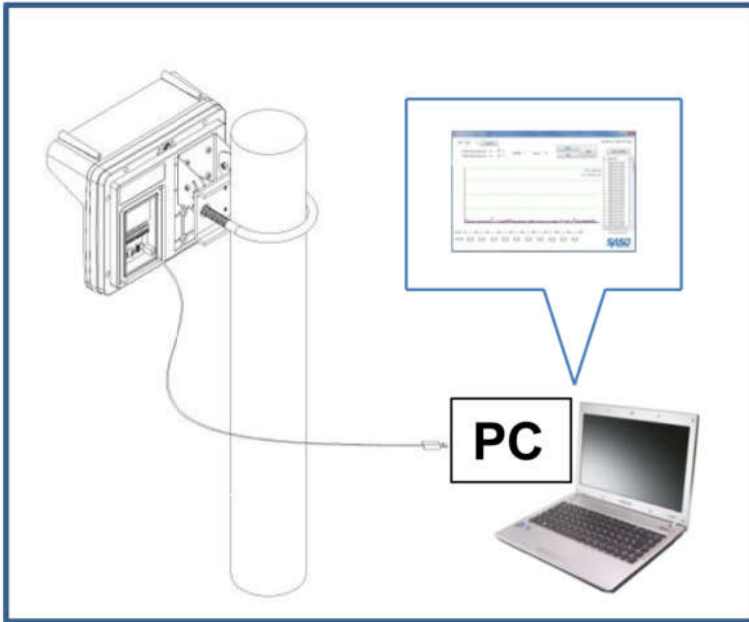


- Integrate with network camera using RS-485
- When detecting an intrusion, information about the intrusion, including the detection location, is transmitted to server and move the camera to focus on the detection location

- Connecting with NVR, integrate with network camera to store visual information









Settings



- A. Port : Go to “Device Manager” in your PC, and check which port the unit is connected. Then, select the port.
- B. Connect / Connected : After selecting the port, click on “Connect”. When connected properly, it will change to “Connected”. When connection is not established, it will change to “Connect Fail”.
- C. ID (RS485) : Indicate a specific ID of the unit in regards to RS485 transmission.
- D. Channel : Displays the channel on which the detector is set. Make sure to alternate channels when install multiple sets of unit nearby.
- E. Graph : Displays graph information during the detection.
- F. Alarm Log : Displays 100 sets of previous alarm log including date, time, and distance at which the detection occurred.



Field Tests

Samsung S1 Institute (3 spots)			Nuclear Power Plant (2 spots)		Samsung Electronics Institute (2 spots)
Fence (50m)	Between Buildings (50m)	Playground (100m)	Fence 1 (90m)	Fence 2 (70m)	Stone Wall (50m/60m)
					
<p>False Alarm Rate KMT; 4.9 times a month P.; 2,968 times a month</p> <p>* Gap between the fence and trees was less than 3 meters</p>	<p>False Alarm Rate KMT; 3.6 times a month</p>	<p>False Alarm Rate KMT; 3 times a month F.; 962 times a month</p>	<p>False Alarm Rate KMT; none</p> <p>* Gap between the fence and radar detector was 2 meters</p>	<p>False Alarm Rate KMT; none</p> <p>* Gap between the fence and radar detector was 2 meters</p>	<p>False Alarm Rate KMT; none</p> <p>* Gap between the fence and radar detector was 2 meters</p>



Development History

Dates	내 용	관련
Nov. 2014	Development Begins	KMT
Nov. 2014	MOU with Samsung	S1
May 2015	IP Test Completion	KTL
May 2015	Salt Resistance Test	KTC
Oct. 2015	Antenna Pattern Verification	RCRI
Nov. 2015	KC & TELEC Certification	KCTL
Dec. 2015	CE Certification	KCTL
Feb. 2016	Development Complete	KMT
Apr. 2016	Fire Resistance Test	SGS
Apr. 2016	Weatherproof Test	KTC
Apr. 2016	Operating Temperature Test	ONETECH
May 2016	Thermal Shock Test (21-Days)	S1
May 2016	Temperature Cycle (500hr)	S1

Participants

KMT Co. Ltd.	1 Master and 3 researchers participated
Samsung S1	3 Doctors, 1 Master and 1 researcher participated
Others	Raonix, Navo System, etc.

Human Detection Test

Walk



Crawl



- **Purpose**
 - To test walking human detection
- **Standard**
 - Installation height : 0.9m
 - Speed: 0.6m/s ~ 7m/s
 - Distance : every 10 meters in 3 ~100m
- **Result**
 - Alarm occurred for 100% of times (Detection Rate; over 99%)

- **Purpose**
 - To test crawling human detection
- **Standard**
 - Installation height : 0.9m
 - Speed: 0.6m/s ~ 7m/s
 - Distance : every 10 meters in 7 ~100m
- **Result**
 - Alarm occurred for 100% of times (detection rate; over 99%)



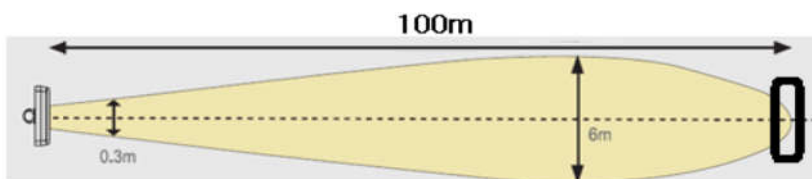
Small Animal Test

- **Purpose**
 - To test pet immunity
- **Standard**
 - Installation height: 0.9m
 - Distance: every 10 meters in 3 ~ 100m
 - Size: 500ml (Water 400ml + Pork 100g)
- **Result**
 - Alarm did not occur for 93% of times (Alarm Rate: Less than 10%)



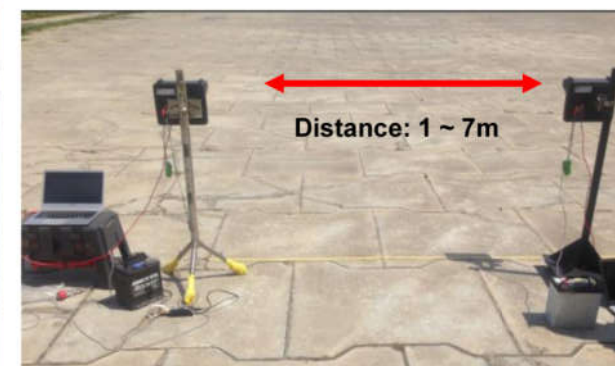
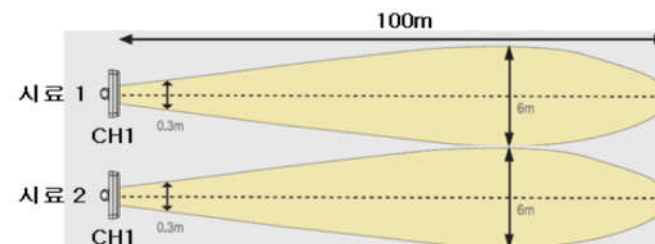
Masking Test

- **Purpose**
 - To test detection of masked human at 100m
- **Standard**
 - Installation height: 0.9m
 - Cover body with a board and pass detection zone at 100m
 - Board Size: 700x1,000x3mm
 - Board Material : wood, plastic, box
- **Result**
 - Alarm occurred in every 10 times











Interference Test

- **Purpose**
 - To check the interference between two units
- **Standard**
 - Installation height : 0.9m
 - Install two units on the same line side by side
 - Distance between units: 1 ~ 7 m
- **Result**
 - No interference between two units when installed more than 6.0m apart





False Alarm Test for Flying Objects

Leaves	Wet leaves	Branches	Styrofoam
			
Plastic Bag	Soda Can	Box	Sponge
			

- No false alarm occurred

False Alarm Test on Human Movement Outside of Fence

- **Purpose**
 - To test on human movement outside of fence
- **Standard**
 - Installation height: 0.9m
 - Distance: 0.5m/1.0m from the fence
 - Approaching distance:
Approaching from every 10m in 3~50m section
- **Result**
 - No false alarm occurred at each sections



False Alarm Test on Vibration of Fence

- **Purpose**
 - To see if it alarms when people shake the fence
- **Standard**
 - Installation height: 0.9m
 - Distance: 0.5m/1.0m from fence
 - By applying vibration on fence in 3 ~ 50m section
- **Result**
 - No false alarm occurred at each sections



Swaying Tree Test

- **Purpose**
 - To test effect of moving branches at outskirts of detection zone
- **Standard**
 - Installation height: 0.9 meters
 - Swing branches at outskirts of detection zone
- **Result**
 - Alarm does not occur with small trees
 - Alarm occurs with trees taller than 1m



Flying Small Animal Test

- **Purpose**
 - To test detection of flying small animal
- **Standard**
 - Installation height: 0.9 meters
 - Range : 10m ~ 100m
 - Toss and catch small animal (500ml)
 - Free fall of small animal (500ml)
- **Result**
 - Alarm did not occur





Case Studies and Advertisement



Case Studies

Public Sector



Airport

KINAC

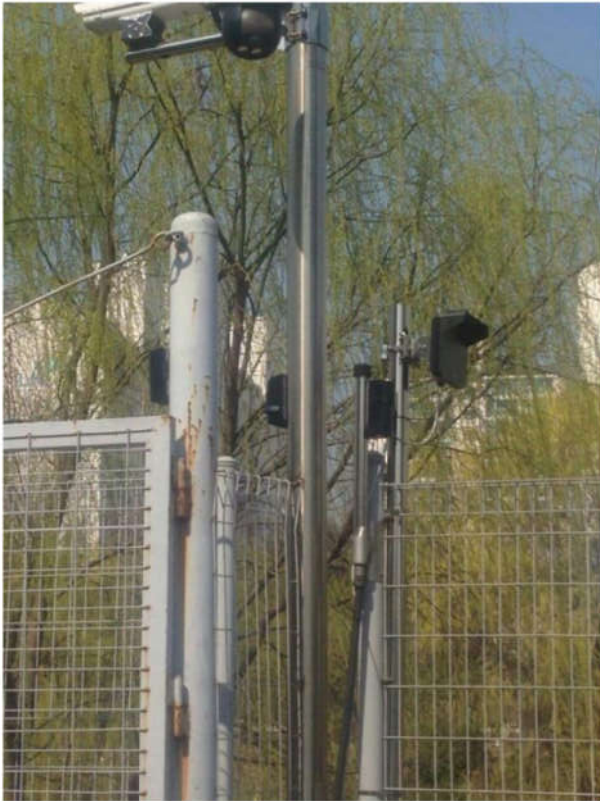
Private Sector



Factory



Private Sector



Samsung Electronics
- Suwon Branch



Samsung S1
- Cheonan Institute



Samsung Electronics
- Hwasung Branch



Thank you.