

# How-to guide of integrating Optex PIE-1 Module in Hikvision I-Series NVR

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## Overview

With a fully-integrated security system that combines OPTEX's sensors with Hikvision's full range of IP cameras and Network Video Recorders on site, users in local or remote monitoring stations will be alerted in the event of an unwanted intrusion. Events can be monitored in real-time, the images recorded, and an appropriate response determined. Equipped with OPTEX's latest analytics programming, false alarms are sure to be minimized.

This how-to guide explains step-by-step how to integrate the PIE-1 with the I-Series NVR, how to receive alarms generated by the Optex sensor.

#### Prerequisites

Hikvision I-SERIES NVR Firmware DZ\_K51\_EN\_STD\_V3.4.93\_170502

Optex supported software versions Redscan RLS-3060L/SH v7.13+ Redscan RLS-2020I/S v1.43+ PIE-1 v1.2.0+

Main functionalities:

- Receive Optex IP comm. protocol
- Report alarm-area data
- Diagnose Tamper/Trouble Sensor events
- Heartbeat monitoring (Device online/offline monitoring)
- Alarm + Camera linkage action
- PTZ linkage
- Event logging

### **Configuring PIE-1 Module**

- 1. Using a Windows OS Machine open Internet Explorer
- 2. Navigate to PIE-1 web page (Default address is 192.168.0.126
- 3. Enter username and password when prompted (Default User: PIE-1 Password: OPTEX)
- 4. Enable "Compatibility View Settings" and add PIE-1 address

	🟦 🖈 🗱 🤇	U Compatibility View Settings X
Print	>	Change Compatibility View Settings
File	>	
Zoom (100%)	>	Add this website:
Safety	>	Websites you've added to Compatibility View:
Add site to Apps		192, 168.0. 126 Remove
View downloads	Ctrl+J	
Manage add-ons		
F12 Developer Tools		
Go to ninned sites		
Compatibility View settings		Display intranet sites in Compatibility View
Internet options		Learn more by reading the <u>Internet Explorer privacy statement</u>
About Internet Explorer		Close

5. On PIE-1 web page select "Configuration" under the left hand column.



6. Set IP address for unit.

The r configuration	
IP Address	192.168.0.126
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0

7. Under Event code configuration select your desired "Transmission Mode" Destination IP address is the NVR IP address, Port Number is Port Event code is sent to

\*Note all modes are compatible, be aware when using UDP Broadcast event codes are sent to all devices on the network.

ID of Detector	126	(000-999)
Transmission Mode	UDP Unicast	~
UDP (Destination)		
IP Address	192.168.0.1	
Port Number	1234	(0-65535)
Number of transmission	3	(1-20)
TCP (Destination)		
IP Address	192.168.0.1	
Port Number	1234	(0-65535)
Time out setting	10	sec. (1-30000
Set continuous alarm	of TA/TR avail	able
Transmission interval	1	sec. (1-3600)

8. Under I/O Configuration select detector model PIE-1 is connected to. E.g. SIP-100

Detector	SIP-100	~
Number of Output Selector	2(DOWN)	V
Detection Range Selector	Far+Near(DOWN)	~
Orange	OFF	~
Yellow	Alarm(Far&Near)	V
Green	Alarm(Creep zone)	V
Blue	Tamper	Y
Dumple	Trouble	V

9. Click "Save Config"



# **Optex Redwall Event code (REC) definitions**

PIE-1	DEC	Meaning	Causa	REC	Meaning	Causa
Model name	NLC	Wearing	Cause	INLO	wieaning	Cause
	MO	Master Alarm	Any zone is in alarm condition	FR	Far Zone Alarm	Far Zone of sensor Active
SIP-100 CL		Master Alarm Clear	Alarm condition restores and clears	NR	Near Zone Alarm	Near Zone of sensor Active
		Tamper Output	Tamper switch is operated or device is rotated	CR	Creep Zone Alarm	Creep Zone of sensor Active
	ta	Tamper Ouput Clear	Tamper switch is closed and cleared	FN	Far or Near Zone Alarm	Far or Near Zone of sensor Active
SID 5030	TR	Trouble Output	Sensor in Mask condition or detector malfunction	XY	Creep and Near Zone Alarm (Combination Code)	Creep and Near Zone of sensor Active
31-3030	tr	Trouble Output Clear	Mask condition restores and clears	YZ	Near and Far Zone Alarm (Combination Code)	Near and Far Zone of sensor Active
SIP-404/5	DM	Device monitoring "heartbeat"	When received Device is online	V7	Creep and Far Zone Alarm (Combination Code)	Creep and Far Zone of sensor Active
SIP-4010/5				~~	Creep and (Far or Near) Zone Alarm (Combination Code)	Creep and Far or Near Zone of sensor Active
SIP-3020/5				CC	Combination Code	Multiple Zones Active
SIP-404						
SIP-4010						
SIP-3020						
Tompor/Trouble	ΤA	Tamper Output	Tamper output active	DM	Device monitoring "heartbeat"	When received Device is online
Generic	ta	Tamper Ouput Clear	Tamper output restored			
(Generic	TR	Trouble Output	Trouble output active			
connections)	tr	Trouble Output Clear	Trouble output Restored			
RBM-60QN	MO	Master Alarm	Beam in alarm	A1	Alarm A1	Zone A1 Active
RBM-100QN	CL	Master Alarm Clear	Beam clear	A2	Alarm A2	Zone A2 Active
RBM-200QN	TA	Tamper Output	Beam Tamper switch open	XY	A1 and A2 Alarm	Both Zone A1 and A2 Active
	ta	Tamper Ouput Clear	Beam tamper restored	CC	Combination Code	Multiple Zones Active
	DM	Device monitoring "heartbeat"	When received Device is online			
DER Single ob	MO	Master Alarm	Any zone is in alarm condition	A1	Alarm A1	Zone A1 Active
RED Single-ch	CL	Master Alarm Clear	Alarm condition restored	A2	Alarm A2	Zone A2 Active
DER Dual ab	TA	Tamper Output	Tamper Switch Active	XY	A1 and A2 Alarm	Both Zone A1 and A2 Active
RED Dual-ch	ta	Tamper Ouput Clear	Tamper switch Restored	CC	Combination Code	Multiple Zones Active
ED Ginela ab	FA	Fault	self diagnostic fault			
FD Single-ch	fa	Fault Clear	fault resolved			
ED Dual at	DM	Device monitoring "heartbeat"	When received Device is online			
FD Dual-ch						

### **Hikvision NVR Setup**

1. Under menu navigate to **Configuration-> Alarm-> Optex** Select which device number you wish to configure and enter "Device IP" address



2. Select which Optex product, Series and model are being used.

			Configuration			
尊 General	Alarm Status	Alarm Input	Alarm Output	Optex		
చి Network	TCP Port	1234		UDP Port	1234	
	Optex Device	• No.	OptexDevice>	>1		
larm >	Device IP		192.168.0 .	.1		
🕫 RS-232	Serial	RedScan		~ Model	RLS-3060SH-4	
	Event List	RedScan				
	Event Enable	PIE-1				
▲ Exceptions	Settings		- <b>*</b>			
👪 User						
📇 Hot Spare						
▲ Live View					Apply	Back

PIE-1 Series has Models Redwall, Redbeam, Fiber and tamper (refer to PIE-1 Web Page to identify) © Hangzhou Hikvision Digital Technology Co.,Ltd. All Rights Reserved.

Redscan series has Zones 4 or Zones 8 (refer to Optex Redscan manager software to identify)

3. Under event list select event then tick event enable and select settings.

	Priority FN		
Event List	Trouble TA	Event Enable	
	Trouble TR	Settings	*
	Priority CR		
	Priority NR		
	Priority FR		
	Priority FN		
	Off Line		
	Connect		

4. Under Setting configure Trigger Channel, Arming Schedule, Linkage action and PTZ Linking.

		Se	ettings				Settings				
Trigger Channel	Arming	g Schedu	ile Lini	kage Acti	on PT	Z Linking	Trigger Channel	Arming Schedule	Linkage Action	PTZ Linking	
■IP Camera	<mark>.</mark> ö1	D2	D3	D4	D5	D6	Week	Mon			
	D7	D8	D9	D10	D11	D12	1	00:00-24:00			۰
	D13	D14	D15	D16			2	00:00-00:00			•
							3	00:00-00:00			•
							4	00:00-00:00			•
							5	00:00-00:00			
							6	00:00-00:00			•
							7	00:00-00:00			•
							8	00:00-00:00			•
		- /	Apply	0	к	Cancel		Сору Арр	у ок	Cance	



Users can filter recorded events for Optex Alarm in



7. Export events by selecting filter for **Optex Alarm in** 

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		Export		
Normal	Event			
Event	Major Type	Alarm Input		
Livern	Start Time	12-31-2015	00:00:00	٩
Picture	End Time	12-31-2015	23:59:59	٩
	Pre-play	30s		
	Post-play	30s		
	Alarm Input No.	Alarm Name		^
	☑Optex Alarm In			
	Local<-1			=
	Local<-2			
	Local<-3			
	■Local<-4			
	Local<-5			
	■Local<-6			
				~
▲ Live View			Search	Back

#### 8. Event log

All Optex events can be found under Maintenance-> Log information major type Alarm in

				s	System Maint	enance			
0	Systen				Log Inform	ation			
		Time		12-31-20	15 18:12:03				•
9	Log inf	Туре		AlarmAlarm Input					
×-	Import	Local Use	r	N/A					
~^	mpon	Host IP Ad	ddress	N/A					
	Lingrad	Paramete	r Туре	N/A					<u>^</u>
-	opgia	Alarm Inpu	ut No.	Optex(1)-	->Priority B1				
e	Defaul	Description	1:						
<i>3</i> 0	Net De	Alarm Input name: Alarm type: N.O Enable settings: No							
Ø	HDD D	PTZ came	era D1 is trigger	red by alarm, p	pattern is ena	abled. Patt	ern No.; 1	OK	
	l					Previous	Next	ОК	
٠	Live Vie	9W					Export All	Search	Back

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#### Compatibility

Firmware: I-Series

NVR\_K51\_BL\_EN\_STD\_V3.4.62\_160820

DS-7608NI-12
DS-7616NI-I2/16P
DS-7716NI-I4/16P
DS-9964NI-18
DS-7616NI-I2
DS-7716NI-I4
DS-7732NI-I4/16P
DS-9632NI-I16
DS-7608NI-12/8P
DS-7732NI-I4
DS-9632NI-18
DS-9964NI-I16

Firmware:

NVR\_NETRA\_BL\_EN\_STD\_V3.4.0\_160422

#### -ST -RT -XT -SP series NVR product list

76xx Series

DS-7608NI-SP, DS-7608NI-ST, DS-7616NI-SP, DS-7616NI-ST, DS-7632NI-ST, DS-7632NI-SP, DS-7608HI-ST, DS-7616HI-ST

77xx Series

DS-7708NI-SP, DS-7708NI-ST, DS-7716NI-SP, DS-7716NI-ST, DS-7732NI-SP, DS-7732NI-ST, DS-7764NI-ST

85xx Series

DS-8508NI-ST, DS-8516NI-ST, DS-8532NI-ST

86xx Series

DS-8608NI-ST, DS-8616NI-ST, DS-8632NI-ST, DS-8664NI-ST

95xx Series

DS-9508NI-RT, DS-9508NI-ST, DS-9516NI-RT, DS-9516NI-ST, DS-9532NI-RT, DS-9532NI-ST

96xx Series

DS-9608NI-RT, DS-9608NI-ST, DS-9616NI-RT, DS-9616NI-ST, DS-9616NI-XT, DS-9632NI-RT, DS-9632NI-ST, DS-9632NI-XT, DS-9664NI-RT, DS-9664NI-ST, DS-9664NI-XT

80xx Series

DS-8004HFI-ST, DS-8008HFI-ST, DS-8016HFI-ST, DS-8004HWI-ST, DS-8008HWI-ST, DS-8016HWI-ST

90xx Series

DS-9004HFI-ST, DS-9008HFI-ST, DS-9016HFI-ST, DS-9004HFI-RT, DS-9008HFI-RT, DS-9016HFI-RT, DS-9016HFI-XT, DS-9004HWI-ST, DS-9008HWI-ST, DS-9016HWI-ST