TELEX
RADIO DISPATCH PRODUCTS

Application Guide

Simple Network Management Protocol (SNMP) for IP-224

VOIProven

TELEX
Radio Dispatch

Proprietary Notice

The product information and design disclosed herein were originated by and are the property of Bosch Security Systems, Inc. Bosch reserves all patent, proprietary design, manufacturing, reproduction, use and sales rights thereto, and to any article disclosed therein, except to the extent rights are expressly granted to others.

Copyright Notice

Warranty Notice (limited)

For warranty and service information, refer to www.telex.com/warranty.

Factory Service Center

Factory Service Center
Bosch Security Systems, Inc.
Radio Dispatch Products
8601 East Cornhusker Highway
Lincoln, Nebraska, 68507

Contact Information

Sales:

Phone .....(800) 752-7560

Fax .....(402) 467-3279

E-mail..... TelexDispatch@us.bosch.com

Customer Service Repair:

E-mail..... repair@us.bosch.com

Phone.....(800) 553-5992

Technical Support:

Knowledge Database . http://knowledge.boschsecurity.com/

LiveChat ..... www.telex.com/us/dispatch/support

E-mail ..... TelexDispatchtechsupport@us.bosch.com

Web ..... www.telex.com

Claims

No liability will be accepted for damages directly or indirectly arising from the use of our materials or from any other causes. Our liability shall be expressly limited to replacement or repair of defective materials.

Warning

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Do not open the unit. No user serviceable parts are contained within. Bosch cannot be responsible for damage. If the unit is opened, the warranty can be voided.

OpenSSL Project

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/). This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes cryptographic software written by Tim Hudson (tjh@cryptsoft.com).

Table of Contents

1.0 Introduction

SNMP (Simple Network Management Protocol) is a protocol used to control and manage IP-based devices. The IP-224 includes a SNMP agent allowing it to become a node on the SNMP network.

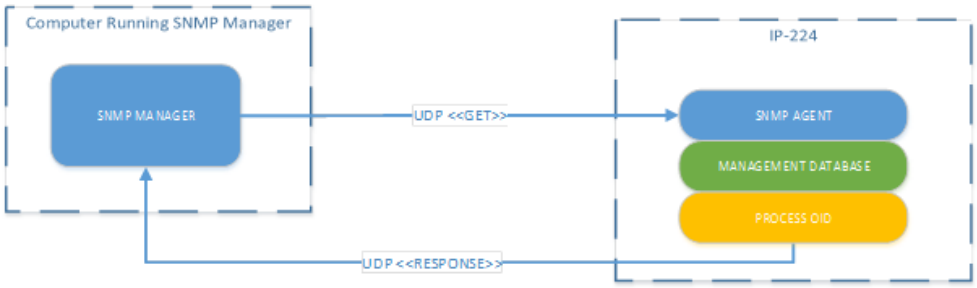
SNMP consists of:

Name	Description
SNMP Manager:	The SNMP manager is the computer running software to manage network devices with SNMP enabled. The Key functions of a SNMP Manager are: • Send queries to SNMP agents • Get and process responses from SNMP agents • Set variables in SNMP agents • Receive traps from SNMP agents
Managed Devices:	A managed device is a network element requiring management, for example the IP-224.
SNMP Agent:	The SNMP agent is a program that runs on an IP-224 and allows the SNMP manager to control and manage the IP-224.
MIB (Management Information Base)**:**	The MIB is the informational database that SNMP agents maintain. This database describes the managed parameters. SNMP managers use this database to query specific information from the SNMP agent. MIB files contain various managed objects identified by an ID, referred to as an **OID** (Object ID). Each OID is unique and holds specific information used for queries. The SNMP manager uses the MIB files to understand the type of information it can query and how to interpret the result.The latest copy of the MIB file can be found on the Product CD shipped with the IP-224. It is located in the IP-224 firmware zip file.

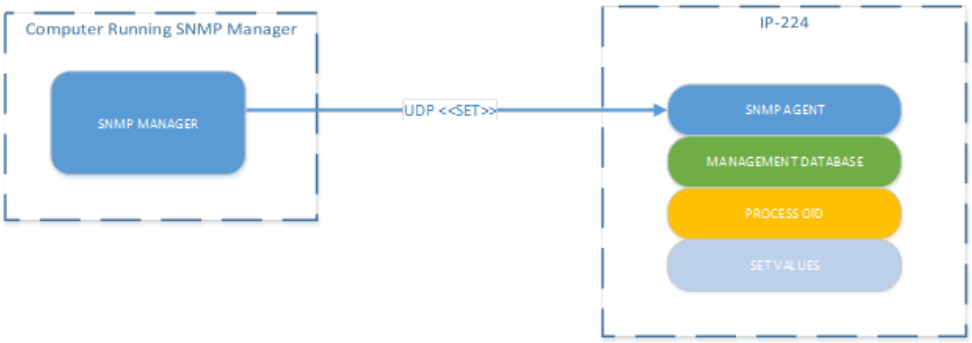
NOTE: The IP-224 firmware version 2.300 supports SNMPv3.

Basic SNMP messages contain the following:

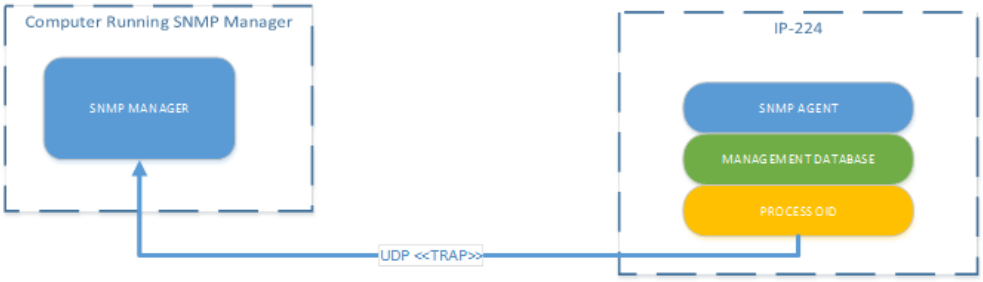
Action	Description
GET:	The GET message is a request sent by the SNMP manager to the managed device. This operation is used to obtain one or more objects from the managed device.



SET:	The SET message is used by the SNMP manager to modify specific values of an object in the managed device.



TRAP:	TRAP messages are initiated by the managed device. The managed device uses these messages to signal the SNMP manager on the occurrence of certain events.



2.0 Hardware Requirements

- IP-224 Ethernet Adapter Panel (P/N F.01U.306.547)
- Computer to run the SNMP Manager and the SNMP Trap Receiver

3.0 Software Requirements

- IP-224 version 2.300 or later
- Telex System Manager (TSM) 2.300 or later
- SNMP Manager and SNMP Trap Receiver (Telex Radio Dispatch does not supply this software)
- IP-224 MIB file

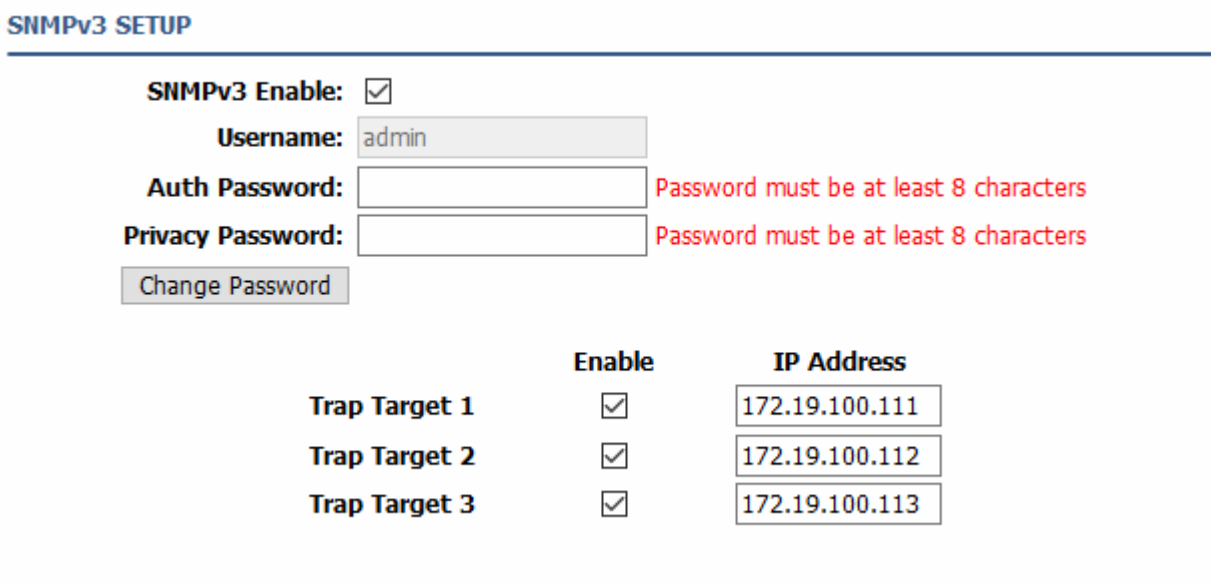
4.0 IP-224 Setup

To **configure the IP-224 for SNMP**, do the following:

1. Open the **IP-224 web application**.
2. From the left navigation, select **Ethernet Setup**.
   The Ethernet Setup window appears.

Under SNMPv3 SETUP

3. Select the **SNMPv3 Enable check box**.
4. If SNMPv3 is enabled, enter an **Auth Password (8 character minimum)** used to connect to the IP-224 SNMP agent.
5. If SNMPv3 is enabled, enter a **Privacy Password (8 character minimum)** used to encrypt the data passed between the IP-224 SNMP agent and the SNMP manager.



6. Click the **Change Password button**.
   The passwords are sent to the IP-224 in temporary storage.
7. Select the **Trap Target 1 check box** to enable sending trap messages to the trap target 1 IP Address.
8. If the Trap Target 1 is enabled, enter the **IP address** of the trap target 1 receiver.
9. Select the **Trap Target 2 check box** to enable sending trap messages to the trap target 2 IP Address.
10. If the Trap Target 2 is enabled, enter the **IP address** of the trap target 2 receiver.
11. Select the **Trap Target 3 check box** to enable sending trap messages to the trap target 3 IP Address.
12. If the Trap Target 3 is enabled, enter the **IP address** of the trap target 3 receiver.
13. Click the **Submit button**.
    The changes are sent to the IP-224 in temporary storage.
14. From the left navigation, select **Save Parameters**.
    The Save Parameters page appears.
15. Click the **Save Parameters button**.
    Changes are now permanently saved to the IP-224 console.

SNMPv3 Enable Check Box

The **SNMPv3 Enable** check box enables the IP-224 SNMP agent to respond to requests from the SNMP manager. If not selected, the IP-224 ignores all requests from the SNMP manager.

NOTE: The latest copy of the MIB file can be found on the Product CD shipped with the IP-224. It is located in the IP-224 firmware zip file.

Username Field

The **Username** field is used with the Auth Password and Privacy Password fields to secure the communication between the IP-224 SNMP agent and the SNMP manager. The username field is automatically populated with *admin* and cannot be modified.

Auth Password Field

The **Auth Password** field is used to enter the password used to connect to the IP-224 SNMP agent. The authorization method used is SHA and the default authorization password is telex1234.

NOTE: If using SNMP, changing the default authorization password is recommended.

This field can contain *up to 16 alphanumeric characters*.

Privacy Password Field

The **Privacy Password** field is used to enter the password used to encrypt the data passed between the IP-224 SNMP agent and the SNMP manager. The privacy method is AES-128 and the default privacy password is telex1234.

NOTE: If using SNMP, changing the default privacy password is recommended.

This field can contain *up to 16 alphanumeric characters*.

Change Password Button

The **Change Password** button is used to modify the authorization and privacy passwords.

Trap Target 1 – 3 Enable Check Box and IP Address Field

Trap Targets are used to set up where the IP-224 sends trap messages. Up to three (3) devices can be configured to receive trap messages from the IP-224.

The **Trap Target 1–3 Enable** check box enables or disables trap targets.

The **Trap Target 1-3 IP Address** field is used to set the destination IP Address of the trap receiver. This is where the IP-224 sends trap messages.

5.0 OID – Object IDs

OID	ID	Description	GET	SET	TRAP
1.3.6.1.4.1.24287.7.1.1	GeneralSetup				
1.3.6.1.4.1.24287.7.1.1.1	DeviceInfo				
7.1.1.1.1	deviceName	Name of the device	X		
7.1.1.1.2	deviceMacId	MAC address of the device	X		
7.1.1.1.3	deviceHardwareVersion	Hardware version of the device	X		
7.1.1.1.4	deviceFirmwareVersion	Firmware version of the device	X		
7.1.1.1.5	deviceSerialNumber	Serial Number of the device	X		
7.1.1.1.6	deviceActiveEnetPort	Current Active Port of the device 0: Primary Port 1: Secondary Port	X		
1.3.6.1.4.1.24287.7.1.1.2	TelexSystemManager				
7.1.1.2.1	tsmEnable	System Manager Enable 0: Disable 1: Enable	X		
7.1.1.2.2	tsmMulticast	Mcast Address of System Manager	X		
7.1.1.2.3	tsmIncomingPort	Incoming Port of System Manager	X		
7.1.1.2.4	tsmOutgoingPort	Outgoing Port of System Manager	X		
7.1.1.2.5	tsmTTL	Time to Live (TTL) of System Manager Value range: 1-128	X		
1.3.6.1.4.1.24287.7.1.1.3	GeneralInfoTable				
7.1.1.3.1	additionalFeaturesTable	A table used to list all the Additional Features of the IP-224	X		
7.1.1.3.2	enabledSerialTypesTable	A table used to list the available Serial Types of the IP-224	X		
1.3.6.1.4.1.24287.7.1.1.5	ResetCommand				
7.1.1.5.1	rcDeviceReset	Set this object value to 1 to reset the IP-224		X	
7.1.1.5.2	rcIdenReset	Set this object value to: 1 to reset the iDEN radio that is connected to the IP-224-Line 1 2 to reset the iDEN radio that is connected to the IP-224-Line2		X	
1.3.6.1.4.1.24287.7.1.2	LineSetup				
1.3.6.1.4.1.24287.7.1.2.1	Line1Setup				
7.1.2.1.1	line1Enable	Line Enable–Line 1 0: Disable 1: Enable	X		
7.1.2.1.2	line1LineName	Line Name–Line 1	X		
7.1.2.1.3	line1LineType	Line Type–Line 1 0: Local Mode 1: Tone Mode 2: Console Mode	X		
7.1.2.1.4	line1SerialType	Serial Type–Line 1	X		

OID	ID	Description	GET	SET	TRAP
7.1.2.1.5	line1VocoderType	Vocoder Type–Line 1 0: Telex 332K 1: G.726 16K 2: G.726 32K 3: G.711 64K	X		
7.1.2.1.6	line1McastEnable	Mcast Enable–Line 1 0: Disable 1: Enable	X		
7.1.2.1.7	line1RXMcast	RX Mcast–Line 1	X		
7.1.2.1.8	line1RXPort	RX Port–Line 1	X		
7.1.2.1.9	line1TXMcast	TX Mcast–Line 1	X		
7.1.2.1.10	line1TXPort	TX Port–Line 1	X		
7.1.2.1.11	line1TXGroupPortA	TX Group Port A–Line 1	X		
7.1.2.1.12	line1TXGroupPortB	TX Group Port B–Line 1	X		
7.1.2.1.13	line1TTL	Time to Live (TTL) of Multicast –Line 1	X		
7.1.2.1.14	line1IPRecorderEnable	Mcast Enable of IP Recorder–Line 1 0: Disable 1: Enable	X		
7.1.2.1.15	line1IPRecorderLineName	Line Name of IP Recorder–Line 1	X		
7.1.2.1.16	line1IPRecorderVocoderType	Vocoder Type of IP Recorder-–Line 1 0: Telex 332K 1: G.726 16K 2: G.726 32K 3: G.711 64K	X		
7.1.2.1.17	line1IPRecorderMcastAddress	Mcast Address of IP Recorder–Line 1	X		
7.1.2.1.18	line1IPRecorderOutgoingPort	Outgoing Port of IP Recorder–Line 1	X		
7.1.2.1.19	line1IPRecorderTTL	Time to Live (TTL) of IP Recorder –Line 1	X		
7.1.2.1.20	line1SerialOverIPRxMulticast	RX Mcast of Serial Over IP–Line 1	X		
7.1.2.1.21	line1SerialOverIPRxPort	RX Port of Serial Over IP–Line 1	X		
7.1.2.1.22	line1SerialOverIPTxMulticast	TX Mcast of Serial Over IP–Line 1	X		
7.1.2.1.23	line1SerialOverIPTxPort	TX Port of Serial Over IP–Line 1	X		
7.1.2.1.24	line1SerialOverIPTTL	Time to Live (TTL) of Serial Over IP –Line 1	X		
7.1.2.1.25	line1MototrboRadioIP	MOTOTRBO Radio IP–Line 1	X		
1.3.6.1.4.1.24287.7.1.2.2	Line2Setup				
7.1.2.2.1	line2Enable	Line Enable–Line 2 0: Disable 1: Enable	X		
7.1.2.2.2	line2LineName	Line Name–Line 2	X		
7.1.2.2.3	line2LineType	Line Type–Line 2 0: Local Mode 1: Tone Mode 2: Console Mode	X		

OID	ID	Description	GET	SET	TRAP
7.1.2.2.4	line2SerialType	Serial Type–Line 2	X		
7.1.2.2.5	line2VocoderType	Vocoder Type–Line 2 0: Telex 332K 1: G.726 16K 2: G.726 32K 3: G.711 64K	X		
7.1.2.2.6	line2McastEnable	Mcast Enable–Line 2 0: Disable 1: Enable	X		
7.1.2.2.7	line2RXMcast	RX Mcast–Line 2	X		
7.1.2.2.8	line2RXPort	RX Port–Line 2	X		
7.1.2.2.9	line2TXMcast	TX Mcast–Line 2	X		
7.1.2.2.10	line2TXPort	TX Port–Line 2	X		
7.1.2.2.11	line2TXGroupPortA	TX Group Port A–Line 2	X		
7.1.2.2.12	line2TXGroupPortB	TX Group Port B–Line 2	X		
7.1.2.2.13	line2TTL	Time to Live (TTL) of Multicast –Line 2	X		
7.1.2.2.14	line2IPRecorderEnable	Mcast Enable of IP Recorder–Line 2 0: Disable 1: Enable	X		
7.1.2.2.15	line2IPRecorderLineName	Line Name of IP Recorder–Line 2	X		
7.1.2.2.16	line2IPRecorderVocoderType	Vocoder Type of IP Recorder–Line 2 0: Telex 332K 1: G.726 16K 2: G.726 32K 3: G.711 64K	X		
7.1.2.2.17	line2IPRecorderMcastAddress	Mcast Address of IP Recorder–Line 2	X		
7.1.2.2.18	line2IPRecorderOutgoingPort	Outgoing Port of IP Recorder–Line 2	X		
7.1.2.2.19	line2IPRecorderTTL	Time to Live (TTL) of IP Recorder –Line 2	X		
7.1.2.2.20	line2SerialOverIPRxMulticast	RX Mcast of Serial Over IP–Line 2	X		
7.1.2.2.21	line2SerialOverIPRxPort	RX Port of Serial Over IP–Line 2	X		
7.1.2.2.22	line2SerialOverIPTxMulticast	TX Mcast of Serial Over IP–Line 2	X		
7.1.2.2.23	line2SerialOverIPTxPort	TX Port of Serial Over IP–Line 2	X		
7.1.2.2.24	line2SerialOverIPTTL	Time to Live (TTL) of Serial Over IP –Line 2	X		
7.1.2.2.25	line2MototrboRadioIP	MOTOTRBO Radio IP–Line 2	X		
1.3.6.1.4.1.24287.7.1.3	TelexTraps				
1.3.6.1.4.1.24287.7.1.3.1	TelexTraps- SystemEvents				
7.1.3.1.1	serialConAlert	Event used to notify when the state of serial connection between the IP-224 and the connected radio has changed.			X

Notes:

Suggestions or comments:
Contact technical support with suggestions or comments concerning this application note.

Technical Support:

Email: TelexDispatchtechsupport@us.bosch.com
Fax: 1-402-467-3279
Phone: 1-800-898-6723

Bosch Security Systems, Inc
8601 East Cornhusker Highway
Lincoln, Nebraska 68507