IP Matrix

MVC-FIPM

BOSCH

en Installation and Operating Manual

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1 Preface

1.1 About this Manual

This manual is intended for persons responsible for the configuration and operation of the IntuiKey keyboard when used with BVIP units (Bosch Video over IP) and the optional IP Matrix function. This manual describes the configuration of IP Matrix and the associated configuration and operation of the IntuiKey keyboard. Relevant knowledge of network technology is required.
See also the documentation on the IntuiKey keyboard and any other associated units. Read and pay particular attention to the safety instructions.

1.2 Conventions in this Manual

In this manual, the following symbols and notations are used to draw attention to special situations:

CAUTION!
This symbol indicates that failure to follow the safety instructions described may endanger persons and cause damage to the unit or other equipment.
It is associated with immediate, direct hazards.

NOTICE!
This symbol refers to features and indicates tips and information for easier, more convenient use of the unit.

1.3 Intended Use

IP Matrix enables automatic and manual selection and assignment of the cameras and monitors belonging to a CCTV system via data networks (Ethernet LAN, Internet). To do this, all cameras and monitors must be connected to BVIP units (Bosch Video over IP). After completing configuration, all functions are performed using the IntuiKey keyboard, which must be connected with a BVIP decoder (for example VIP XD).
In the event of questions concerning the use of IP Matrix that are not answered in this manual, please contact your sales partner or:
Bosch Security Systems
Robert-Koch-Straße 100
85521 Ottobrunn
Germany
www.bosch-securitysystems.com

1.4 Rating Plate

For exact identification of the IntuiKey keyboard in use, the model name and serial number are inscribed on the bottom of the housing. Please make a note of this information before installation, if necessary, so as to have it to hand in case of questions or when ordering spare parts.

2 Product Description

2.1 System Requirements

Configuration Requirements

- IntuiKey keyboard fully installed and ready for operation
- BVIP decoder with at least firmware 4.0 fully installed and ready for operation
- Computer with Windows 2000 or Windows XP operating system
- Network access (Intranet or Internet)
- Screen resolution 1,024 × 768 pixels
- 16- or 32-bit color depth
- Installed Sun JVM
- Microsoft Internet Explorer (version 6.0 or higher)
  or
- Installed Configuration Manager program (version 1.60 or higher)

NOTICE!
Also note the information in the **System Requirements** document on the product CD supplied. If necessary, you can install the required software and controls from the product CD supplied with the BVIP decoder in use.
You can find notes on using Microsoft Internet Explorer in the online Help in Internet Explorer.

Operational Requirements

- IntuiKey keyboard fully installed and ready for operation
- BVIP decoder fully installed and ready for operation, includes installed and configured IP Matrix function

2.2 Overview of Functions

IP Matrix System

IP Matrix can be used to control IP-based monitoring systems of up to 32 cameras and up to ten monitors via an IntuiKey keyboard without the use of a computer. In normal operation, the system works only via the network connections between IP cameras, encoders and decoders, controlled via the IntuiKey. As part of a larger CCTV system, IP Matrix can be used as a satellite system. The higher-ranking system can access IP Matrix for control purposes. Otherwise, IP Matrix works independently and is completely self-sufficient.

Camera Tours and AutoDome Presets

IP Matrix supports the configuration of up to five predefined camera tours; you can switch these rather than individual cameras to monitors. These tours enable up to ten cameras to be switched in a continuous sequence in accordance with a schedule. AutoDome cameras can be controlled as usual via IntuiKey.Fixed AutoDome positions can be configured in the system as virtual cameras.

Special Functions and Alarm Task Scripting

In addition to providing access to the camera menus, IP Matrix also enables up to eight special functions to be accessed at the touch of a button. These special functions can be configured in the system via Alarm Task Scripting. Alarm Task Scripting can also be used to display camera and encoder alarms on the IntuiKey. In the event of an alarm, the alarm key on the IntuiKey lights up red until the alarm is confirmed by pressing the alarm key. A script can also be configured to trigger a reaction to the alarm when the alarm key is pressed.

Configuration

IP Matrix can be configured with a Web browser on the local network (Intranet) or via the Internet.
Use of a computer is only required for configuring the system or for maintenance purposes.

Summary

IP Matrix provides the following main functions:

- Purely IP-based CCTV matrix system
- Up to 32 cameras, ten monitors and one IntuiKey keyboard
- No computer required to operate system
- Automatic camera tours
- Automatic alarm processing via Alarm Task Scripting

3 Installation and Configuration

3.1 IntuiKey

IP Matrix is controlled via the IntuiKey keyboard. The IntuiKey functions are only described here if they are relevant for operating IP Matrix. Standard functions are described in the IntuiKey documentation. Familiarize yourself with the keyboard and its functions before configuring and operating IP Matrix.

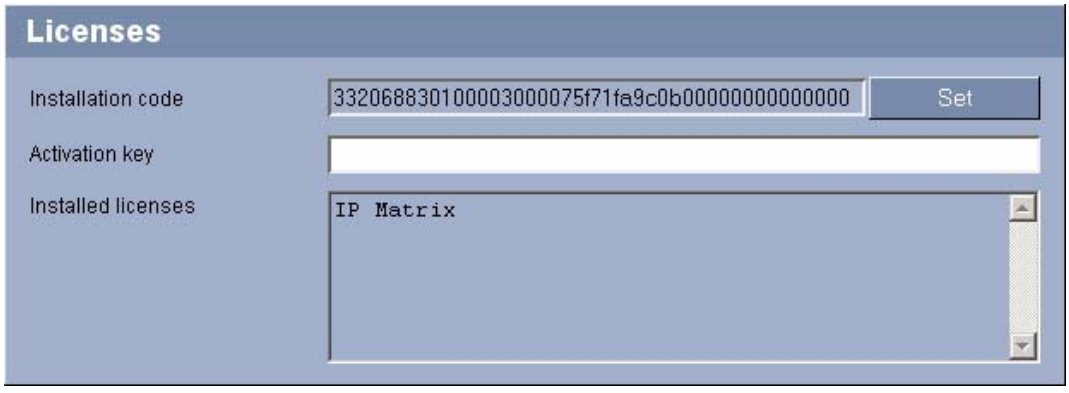
CAUTION!
Observe the Installation and Operating Manual for the IntuiKey keyboard.
This contains important information regarding safety and operating options.
Ensure that at least firmware version 1.60 is installed in the IntuiKey in use. Older versions cannot be used for IP Matrix.

3.2 BVIP Units

Various BVIP units, for example network video servers and IP cameras, are integrated into the IP Matrix-controlled system.

CAUTION!
Observe the Installation and Operating Manuals for the BVIP units in use.
This contains important information regarding safety and operating options.

3.3 Activating a License



In order to use the IntuiKey with IP Matrix, you must purchase a corresponding license, which enables the IP Matrix functions in the required BVIP decoder (VIP XD or XFMD decoder module). Enter the activation key for enabling IP Matrix on this page.

NOTICE!
The license cannot be deactivated again and is not transferable to other units. More information on operating the network video server is available in the associated Installation and Operating Manual and in the online Help.

Requesting activation keys
When you purchase IP Matrix, you will be provided with an authorization number. This number can be found in an envelope that is included with the scope of delivery or is provided via e-mail. You use this number and the installation code on the **Licenses** page to generate the activation key on the **Bosch Software License Manager** Internet platform.

1. Open the following website: https://activation.boschsecurity.com/. The Bosch Security Systems **Software License Manager** user interface will appear. The page appears in English only.
2. If you already have an account, log in. You can create a new account if you wish. The benefit of an account is that you can list all of your previous license activations. Alternatively, you can also continue the process without logging in. Next, you will see the **License Activation** screen.
3. Enter the authorization number that you received when you purchased IP Matrix.
4. Then click the check mark next to the input window.
5. The next step is to enter the installation code along with brief information about the installation location. You may also add a comment. This information will assist you later in assigning the Activation Key to the device.
6. Click **Submit**. The activation key is displayed. You can copy the key to the clipboard.

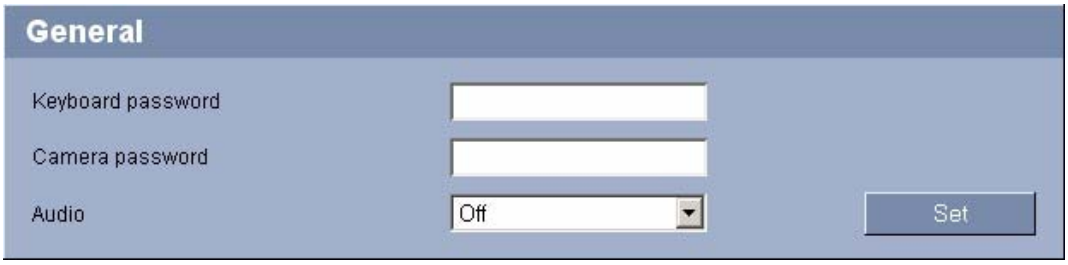
Alternatively, you can have the activation key e-mailed to you. To do this, click the **Email Activation Key** link. You will see a dialog box in which you can enter two e-mail addresses for recipients. You can print this page out.

Entering Activation Keys

Once you have received the activation key, enter it on the **Licenses** page to enable IP Matrix.

1. Put the BVIP decoder selected for configuration into operation.
2. Start the Web browser.
3. Enter the IP address of the BVIP decoder as the URL. The connection is made and after a short time you will see the **SETTINGS** screen with the configuration menu.
4. Switch to the **Service** > **Licenses** page and enter the activation key for your license.
5. Click the **Set** button. The IP Matrix functions are activated and you will see new entries on the left in the configuration menu.

3.4 General



If necessary, you can use this page to enter passwords and configure basic audio transmission settings.

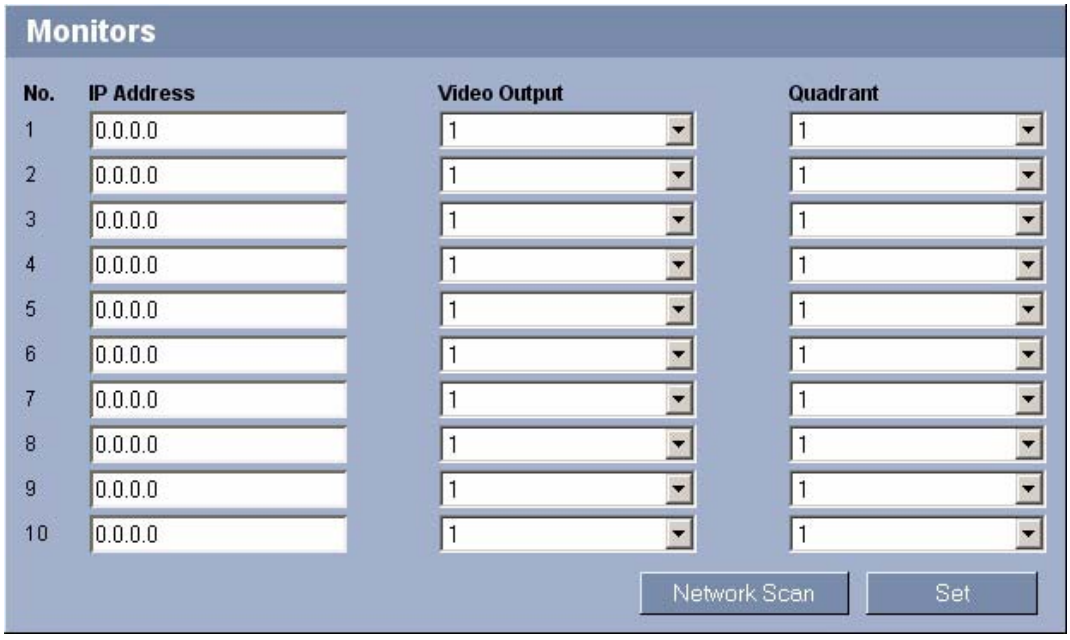
Keyboard password
You can configure a password to access IP Matrix from IntuiKey. You must then enter this password on the IntuiKey to enable control of IP Matrix. The password must be made up of a maximum of eight digits.
If no password is necessary, leave this field empty.

Camera password
You can enter a password that is to be used to access password-protected BVIP senders (cameras or encoders). The password is valid for all units in the system.

NOTICE!
All IP cameras or network video servers in the system must be protected by the same password, as IP Matrix only manages one common password for access purposes.

Audio
The audio signals are sent in a separate data stream parallel to the video data, and so increase the network load. The audio data are encoded according to G.711 and require an additional bandwidth of approx. 80 kbps for each connection.

3.5 Monitors



On this page, select the monitors that you want to integrate into your matrix system. To do this, you must enter the IP address of the decoder unit (for example a VIP XD), select the video output you require and select the decoder you are using. You can integrate a maximum of ten monitors into the system.
You can use various decoder units in a system at the same time, for example several VIP XD units together with an XFMD decoder module. Four quadrants each can be selected for a VIP XD and for video outputs 1 and 3 of the XFMD module. This makes a quad view possible for the video outputs concerned. If you want to use a VIP XD with connected monitor to display four camera images, for example, select the same IP address and video output **1** four times, and then select quadrants **1** to **4**.

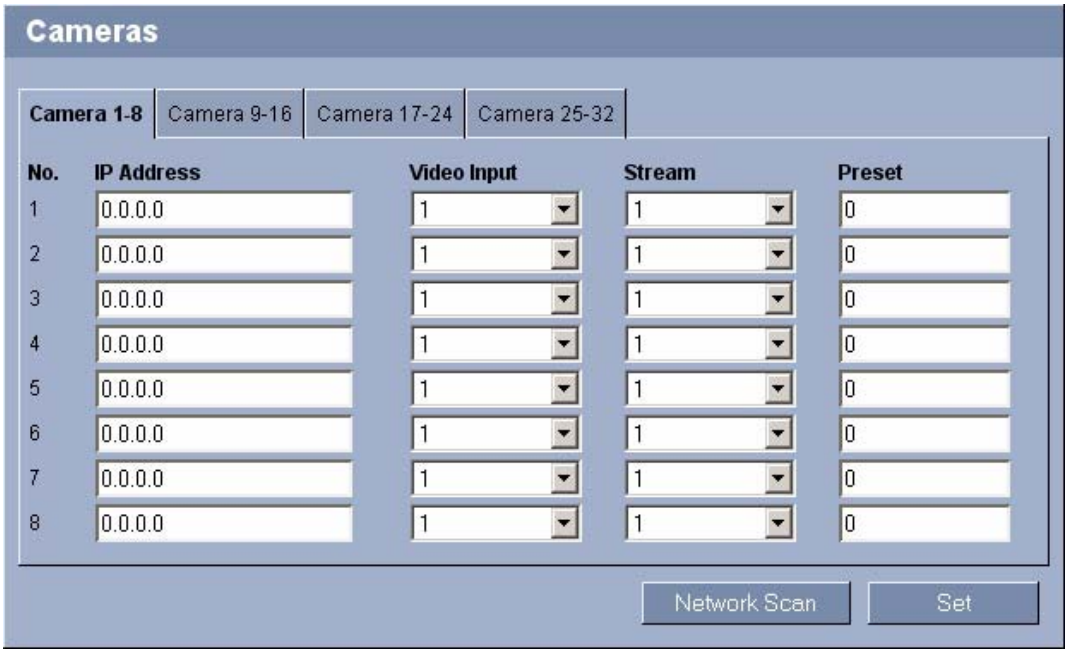
IP Address
Enter the IP address of the decoder unit here. Alternatively, you can perform a network scan and select the IP address you require from the results.

1. Click the **Network Scan** button. The search for decoder units is started. When the search has finished, a small arrow appears next to the fields for the IP addresses.
2. Move the cursor over the arrow next to the **IP Address** field. The list of units found is displayed.
3. Click the IP address you require to transfer it to the **IP Address** field.

Video Output
Select the number of the video output you require from the list. The numbering follows the labeling of the video outputs on the unit.

Quadrant
A decoder unit with a monitor output that allows quad view provides four decoders for this monitor output. These correspond to quadrants **1** to **4**. In this case, select the number of the quadrant you require from the list.

3.6 Cameras



On this page, select the cameras that you want to integrate into your matrix system. To do this, you must enter the IP address of the encoder unit (for example a VideoJet X40), select the video output you require and select the stream you are using. You can integrate a maximum of 32 cameras into the system.
With an AutoDome or a compatible unit that supports the AutoDome protocol, you can select a preset. When you select this camera number with the keyboard, the camera moves to the corresponding preset position.

IP Address
Enter the IP address of the encoder unit or IP camera here. Alternatively, you can perform a network scan and select the IP address you require from the results.

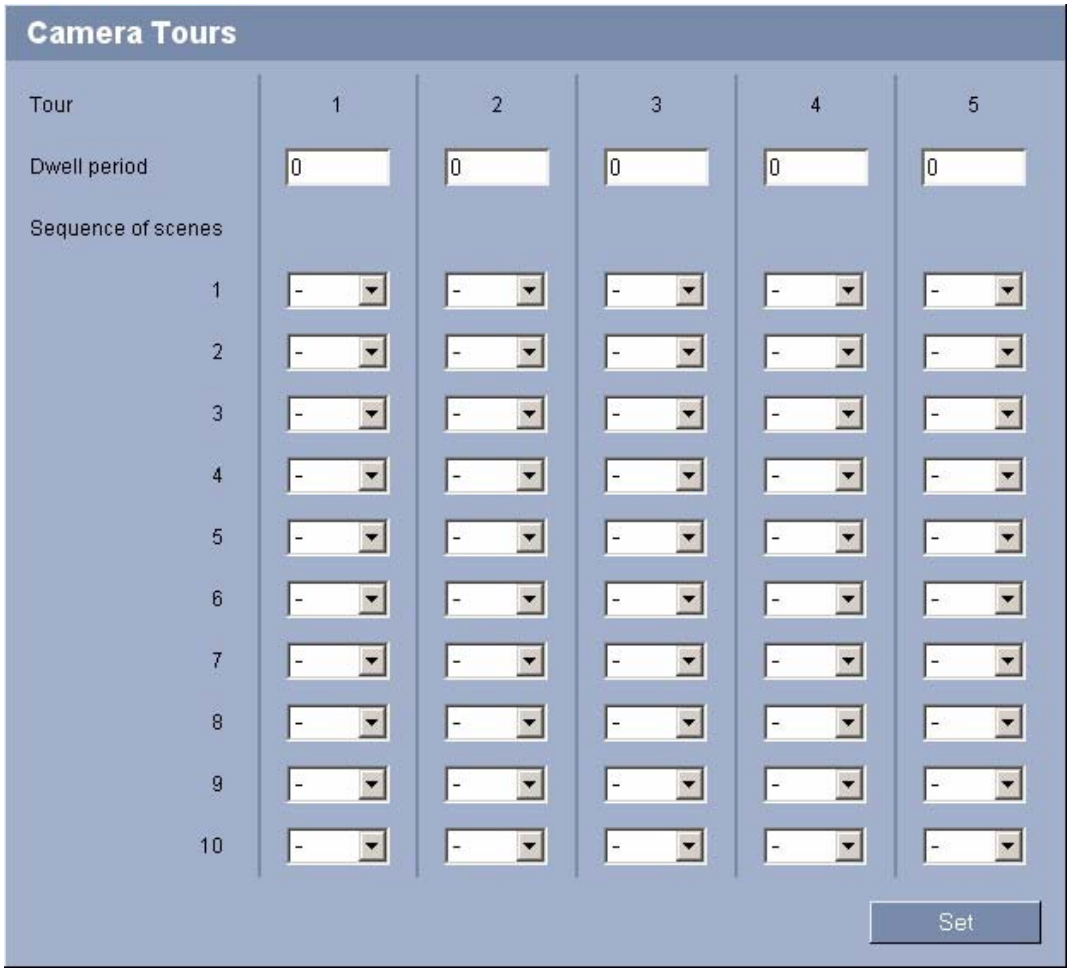
1. Click the **Network Scan** button. The search for encoder units and IP cameras is started. When the search has finished, a small arrow appears next to the fields for the IP addresses.
2. Move the cursor over the arrow next to the **IP Address** field. The list of units found is displayed.
3. Click the IP address you require to transfer it to the **IP Address** field.

Video Input
Select the number of the video input you require from the list. The numbering follows the labeling of the video inputs on the unit.

Stream
Select the number of the data stream you require from the list.

Preset
For an AutoDome or a compatible unit that supports the AutoDome protocol, enter the required preset in the field.

3.7 Camera Tours

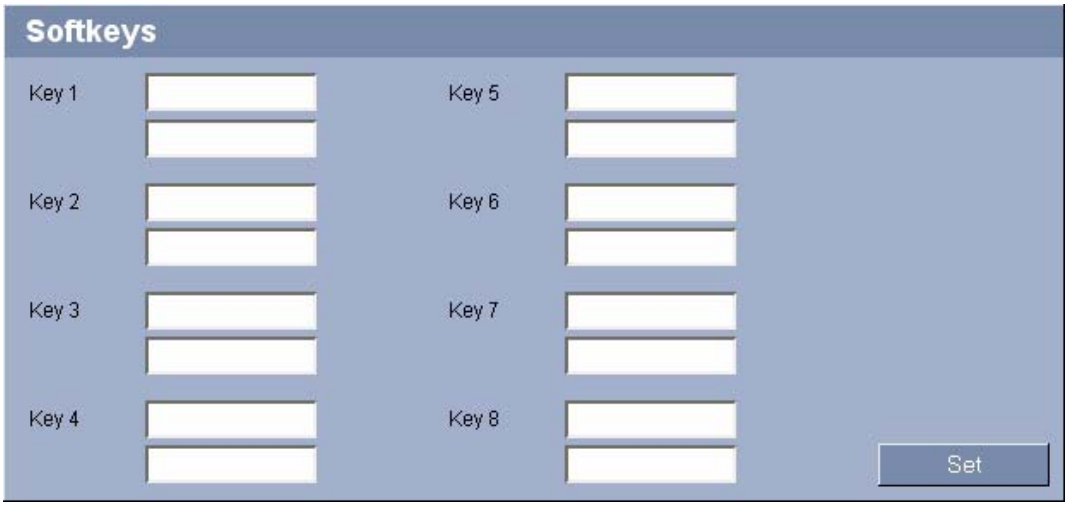


You can program five camera tours, which you can start and end with the IntuiKey. To do this, select the dwell period for each camera and the sequence of the cameras involved; do this for each camera tour. Each camera tour can contain a maximum of ten scenes.

Dwell period
Enter the dwell period in seconds. The dwell period you enter applies to every scene of the camera tour.

Sequence of scenes
Select the number of each camera you require from the list in sequence. The numbers correspond to the camera numbers on the **Cameras** configuration page. You can also use the same camera more than once in each camera tour.

3.8 Softkeys



Here you can enter two lines of display text for the eight softkeys on the keyboard. These are then displayed in the softkey display in the **Special Functions** menu. You can enter a text with a maximum of ten characters in each field.

NOTICE!
The softkeys are programmed using the Alarm Task Editor. For further information on this, please see the **Alarm Task Editor** section in the Installation and Operating Manual of the BVIP decoder and in the **Alarm Task Script Language** document.

3.9 Connecting and Starting the IntuiKey

CAUTION!
Please observe the Installation and Operating Manuals for the IntuiKey keyboard and the BVIP decoder in use.
This contains important information regarding safety and operating options.
Ensure that at least firmware version 1.60 is installed in the IntuiKey in use. Older versions cannot be used for IP Matrix.

1. Connect the **RS-232** serial interface on the rear panel of the keyboard to the corresponding connections of a BVIP decoder, for example a VIP XD. Please also observe the markings for the individual cables.
2. Switch on the power supply for the IntuiKey.
3. Press the **Prod** key and select the **Terminal** option on the left. **IP Matrix** is displayed in the status display.
4. If access to IP Matrix is password protected, you must now enter the password that you defined on the **IP Matrix** > **General** configuration page for the connected BVIP decoder.

4 Operation of IP Matrix using the IntuiKey

4.1 Connecting

If the IntuiKey keyboard is connected via the serial interface to a BVIP decoder with activated IP Matrix, you can control the matrix system with the IntuiKey.

1. Switch on the power supply for the IntuiKey.
2. Press the **Prod** key and select the **Terminal** option on the left. **IP Matrix** is displayed in the status display.
3. If access to IP Matrix is password protected, you must now enter the password that you defined on the **IP Matrix** > **General** configuration page for the connected BVIP decoder.

4.2 Function Keys

The IntuiKey features the following function keys, which perform the predefined functions specified below:

Key	Function
Prod	Starts the search for products that are compatible with the IntuiKey. Press this key if the connection to IP Matrix is interrupted. Then press the **Terminal** softkey to return to the main menu.
Mon	Press this key to select a monitor.
Clr	Press this key to delete your last entry with the numeric keys. After switching on the keyboard, you can press this key to shorten the boot routine.
Alarm	This key lights up red if alarms are currently being issued from the cameras. By pressing repeatedly, you can acknowledge several alarms one after the other. Depending on how IP Matrix is programmed, further actions are triggered when the alarm key is pressed.
Shot	With active AutoDome: Press this key to select and move to a previously saved preset position.
Enter	Press this key to complete and confirm an entry with the numeric keys.

NOTICE!
Functions that concern a monitor or a camera always act on the active monitor and camera. Their numbers are displayed in the status display.

4.3 Switching Camera to Monitor

You can switch each of the maximum 32 cameras in the system to each of the maximum ten monitors. In certain cases, depending on how IP Matrix is programmed, several camera images can be displayed on one monitor, for example as a quad view.

1. Press the **Mon** function key and then press the number of the selected monitor.
2. If you have typed the wrong number, press the **Clr** function key and enter the number again.
3. Press Enter to confirm the monitor selection.
4. Enter the number of the camera to be connected and press Enter again to confirm the camera selection. The camera image is displayed on the monitor.
5. To switch off a camera connection, enter the number **0** and press Enter. There is now no camera image displayed on the monitor.

Switching Monitor Displays

Depending on the decoder's configuration for the monitor, either a single view or quad view will be displayed. You can switch between single view and quad view.

1. Press the **Single View** softkey to view the image of the selected camera as a single view.
2. Press the **Quad View** softkey to view the image of the selected camera in one quadrant of the quad view.

Selecting Cameras and Monitors in Turn

You can select the available cameras and monitors in turn in accordance with their numerical sequence, without having to enter the number of each camera or monitor. The sequence follows the numbering on the **IP Matrix** > **Monitors** and **IP Matrix** > **Cameras** configuration pages.

1. Press the **Next Monitor** softkey to select the next monitor in the system. You will see the camera image that was last assigned to this monitor.
2. Press the **Previous Monitor** softkey to select the previous monitor in the system. You will see the camera image that was last assigned to this monitor.
3. Press the **Next Camera** softkey to select the next camera in the system. The camera image is switched to the monitor that is currently active.
4. Press the **Previous Camera** softkey to select the previous camera in the system. The camera image is switched to the monitor that is currently active.

4.4 Controlling Cameras

You can operate controllable cameras using the joystick, provided they are connected to the active monitor.

1. Press the joystick in the required direction to pan or tilt the camera. If you press more firmly, the camera motion will speed up.
2. Turn the joystick to zoom in or out.

Camera Configuration

If the camera offers an OSD menu, you can configure the camera via this menu.

1. Press the **Camera Menu** softkey to switch to the camera menu.
2. Press the **Show OSD Menu** softkey. The configuration menu of the active camera is displayed on the monitor.
3. Follow the instructions on the monitor to configure the camera.

Camera Overlays

You can switch text overlays such as sector and tour titles on or off.

1. Press the **Camera Menu** softkey to switch to the camera menu.
2. Press the **OSD On** softkey to switch the overlays on.
3. Press the **OSD Off** softkey to switch the overlays off.

Presets

For controllable cameras, you can store and access presets.

1. Press the **Camera Menu** softkey to switch to the camera menu.
2. Navigate the camera to the required position.
3. Press the **Store Preset** softkey and then the number under which you want to store the preset position.
4. Press Enter to confirm the storage.
5. To call up a stored preset, press the **Shot** function key and then press the corresponding number.
6. Press Enter to confirm the selection. The camera moves to the stored preset position.

Using Aux Commands

You can transmit Aux commands to the camera.

1. Press the **Camera Menu** softkey to switch to the camera menu.
2. Press the **Aux On** softkey and then press the number of the Aux command you require.
3. Press Enter to confirm the selection. The command is executed.
4. Press the **Aux Off** softkey to cancel an Aux command currently being executed.

4.5 Starting and Exiting a Camera Tour

You can start and exit five different camera tours that are configured using IP Matrix. Different camera images are displayed on the selected monitor in automatic rotation.

1. Press the **Tour On** softkey. The **Tour On** function is displayed in the status display.
2. Enter the number of the selected camera tour and press Enter to confirm the selection. The camera tour is started and you see the first camera image on the monitor. In the status display, a current camera tour is indicated by an arrow between the monitor and camera numbers.
3. Press the **Tour Off** softkey. The camera tour ends.

4.6 Softkeys

You can use the softkeys to select other functions. The function of a softkey depends on what menu is currently active. The current function of a softkey is always displayed in the softkey display.
The upper part of the softkey display always shows the following functions:

Softkey	Function
Main Menu	Shows the function menu of IP Matrix in the lower part of the softkey display.
Camera Menu	Shows the function menu of the active camera in the lower part of the softkey display.
Logout	Ends the connection with IP Matrix.
Special Functions	Shows the special functions menu in the lower part of the softkey display.

4.7 Alarm

If an alarm for a BVIP unit activates the alarm key of the Intuikey via Alarm Scripting, the alarm key lights up red. You can acknowledge the current alarms individually by pressing the key. When all alarms have been acknowledged, the key is no longer lit up.

NOTICE!
Depending on how IP Matrix is programmed, you can trigger further actions by pressing the alarm key.

4.8 Troubleshooting

If a malfunction occurs, the IntuiKey transmits a signal tone and displays an error message in the softkey display. In addition, an **E** is displayed in the status display. If you are unable to resolve the malfunction, please contact your supplier or systems integrator, or go directly to Bosch Security Systems Customer Service.
The following table is intended to help you identify the causes of malfunctions and correct them where possible.

Error message	Possible causes	Recommended solution
IP Matrix settings are incomplete.	No monitors or cameras are specified for the matrix system.	Specify at least one monitor and one camera for the matrix system.
Monitor not specified.	No monitor is specified for the number entered.	Specify a monitor for this number in the matrix system or enter another number.
Camera not specified.	No camera is specified for the number entered.	Specify a camera for this number in the matrix system or enter another number.
Tour specifications missing.	There are no tour settings in the BVIP decoder.	Check whether the sequence of scenes and the dwell period have been defined for the tour in the matrix system.
	No tour has been specified for the number entered.	Specify a tour for this number in the matrix system or enter another number.
Connection failed.	One of the selected BVIP units is password protected.	Configure the password in the matrix system.
	One of the selected BVIP units is offline.	Ensure that all units in the network can be accessed.
	There is a network problem.	Ensure network availability.

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