

ViewMatrix^x


...the Monitoring Software

User's Guide

PAPADOX HELIX A.E.
fire alarm & security systems



Software for Online Monitoring and Control
of *Matrix2000* Conventional Fire
Alarm Panels



1. Introduction	3
2. General View	4
3. Keyboard	6
3.1 POWER indication - Normal Operation	7
3.2 FAULT indication - ALARM indication	8
3.3 Control via mimic keyboard	8
3.4 Control of the system - Authorization	9
4. Client information field	11
5. Zone description field	12
5.1 Zone	12
6. System Setup Representation	15
7. System events log	16

1. Introduction

ViewMatrix is software for online monitoring and control of fire alarm installations that make use of the *Matrix 2000* conventional fire alarm panels. It has been especially developed by the R&D department of Paradox Hellas S.A and accompanies the *Matrix 2000* control panels. The aim is to provide the end user with the option to have direct and full information of the status of his **conventional** fire alarm system via a computer situated in his office. It is probably the only one in the world market today that supports fire alarm installations in that way.

The program runs under Windows XP and can be used like any other windows application. This software simulates the keyboard and the settings of the control panel in a user friendly graphical environment. The end user can simply perform any action with a simple click of a mouse button on the mimic diagram on the screen of his PC.

The whole idea is simple, user friendly and secure, without complications that would confuse the user. As a result, it is a robust, reliable application, an aspect that is of great importance in the area of fire alarm systems.

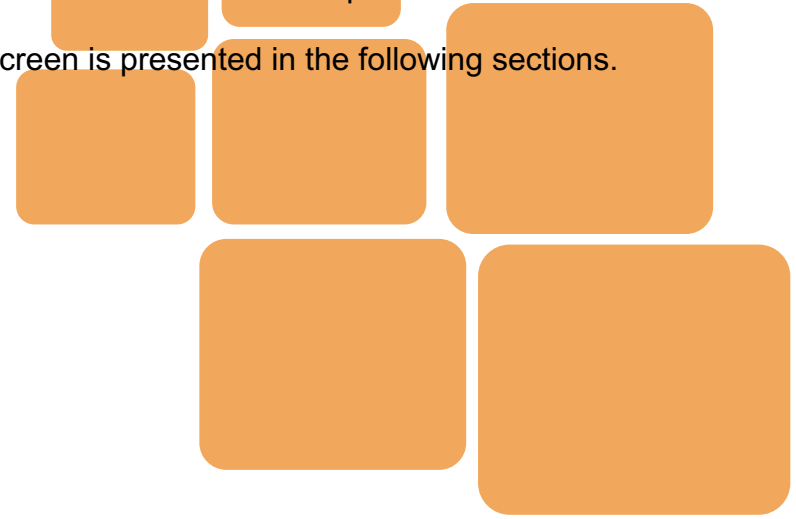
2. General view

ViewMatrix provides the end user with an overview of all the incidents that take place while the fire alarm system is in use. It enables control of all the parameters that a fire alarm system consists of, from the state of the sensors which are situated far in the installation field to the settings of the microcontroller of the control panel.

Figure 1 presents the main screen that appears when the user runs *ViewMatrix*. This is the main control screen for the system. It is divided into five fields that are related to different actions of control and observation of the system. Besides these fields, there are menus on top of the screen and a Toolbar whose role is supportive to the actions the user may undertake, like in every windows based application. At the bottom of the screen there is a Progress bar of the system. It is in motion throughout the operation of the control panel and *ViewMatrix*. Its motion is interrupted when there is a problem in the communication between the PC and the control panel. In addition, there is a toolbar whose role is supportive to the actions the user may undertake, like in every windows based application.

At this point, a brief overview of the main program screen is given. The first field, that usually takes up most part of the screen, is a full representation of the actual keyboard of the control panel. Another field, situated on the top right corner of the screen, includes all the information about the client. Under this field, there is another one that gives the installer user the option to have an independent description of each zone for his fire detection installation. A field that contains information about the settings of the microcontroller is placed at the bottom right hand side of the main screen. Last, there is a real time report of the events that take place while *Matrix 2000* is in operation.

A more detailed description of the fields that make up the main screen is presented in the following sections.



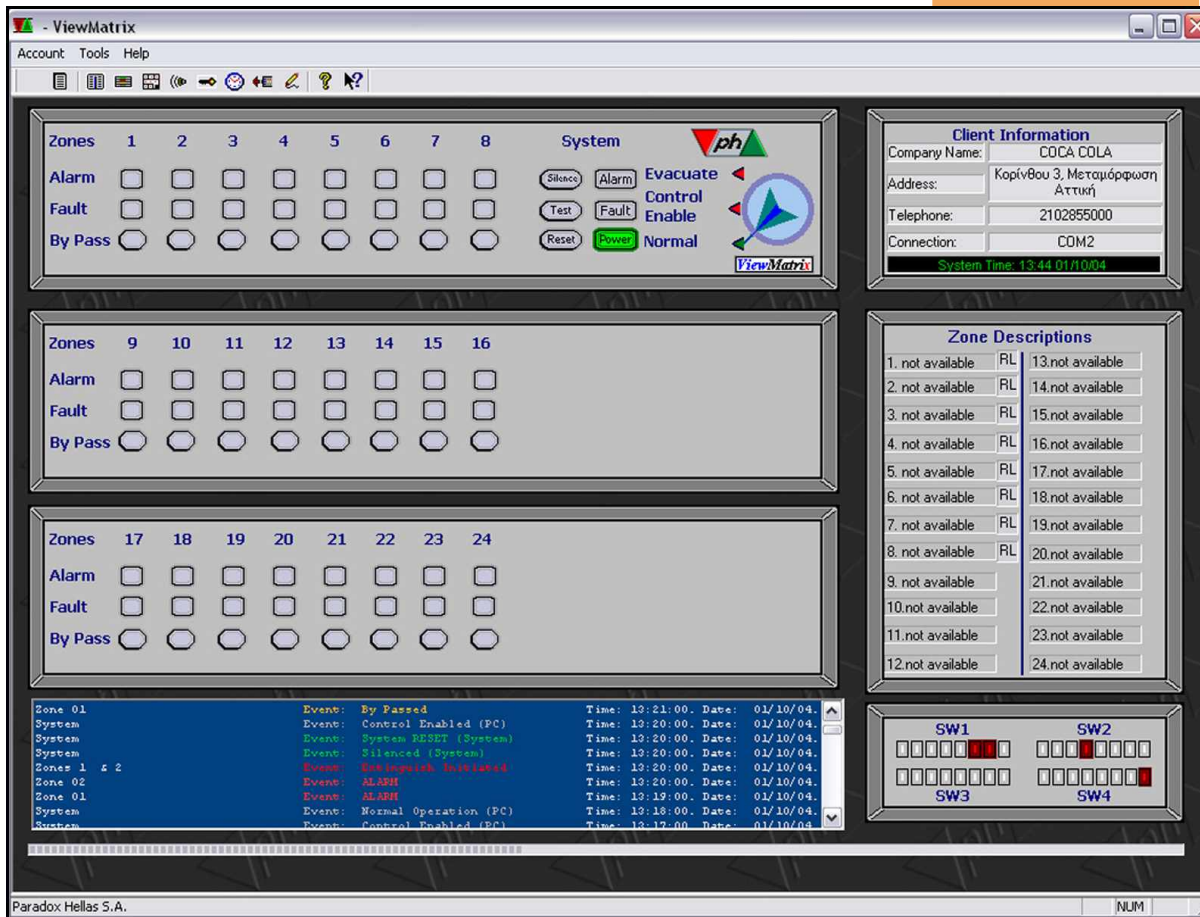


Figure 1: *ViewMatrix* main screen.

3. Keyboard

The first field of **ViewMatrix** main page represents the installed panel's keyboard. The program can represent any of 4 up to 24 zones panel. The size of the panel is automatically adjusted to the size of the actual silicon rubber keyboard. Next, we can see how **ViewMatrix**'s main screen will appear when we have a system of 12 and 24 zones respectively.

The analysis will be based on the 24 zone panel which is presented in Figure 3. The system operates in exactly the same way as the panel's keyboard. The whole process is interactive, including messages from the actual plant to the software and control of the plant (the fire detection system) from the software using buttons that enable control of the system functions and indications of the state of it. The buttons enable the user to change the state of the system, reset it, set it to silent mode (Silence) or Bypass a zone. On the other hand the indications of the state of the system are in the form of LEDs that flash in certain ways. There are indications for the Power, Fault or Alarm conditions etc. Note that all points of the field are active. All LED icons are flashing exactly in the same way and at the same time as the panel's LEDs are, according to the status of the system.



Figure 2: **ViewMatrix** main screen for 12 and 14 zones of surveillance.

3.1 Power indication - Normal Operation

The indication *Power* is turned on constantly on the mimic keyboard when the system is in normal system operation and when voltage of 27,5V is applied from the main or backup(batteries) power supply. It also provides the installing engineer with the information that the software of the panel is “running” without problems. The round blue icon with the arrow on the right hand side represents the key switch of the control panel through which we gain access to the two Access Levels of the system. It has three states: *Normal*, *Control Enable* and *Evacuate*. For standard operation this is turned to *Normal* with the system ready to accept commands of alarm from the zones or recognise any problem that occurs in the installation

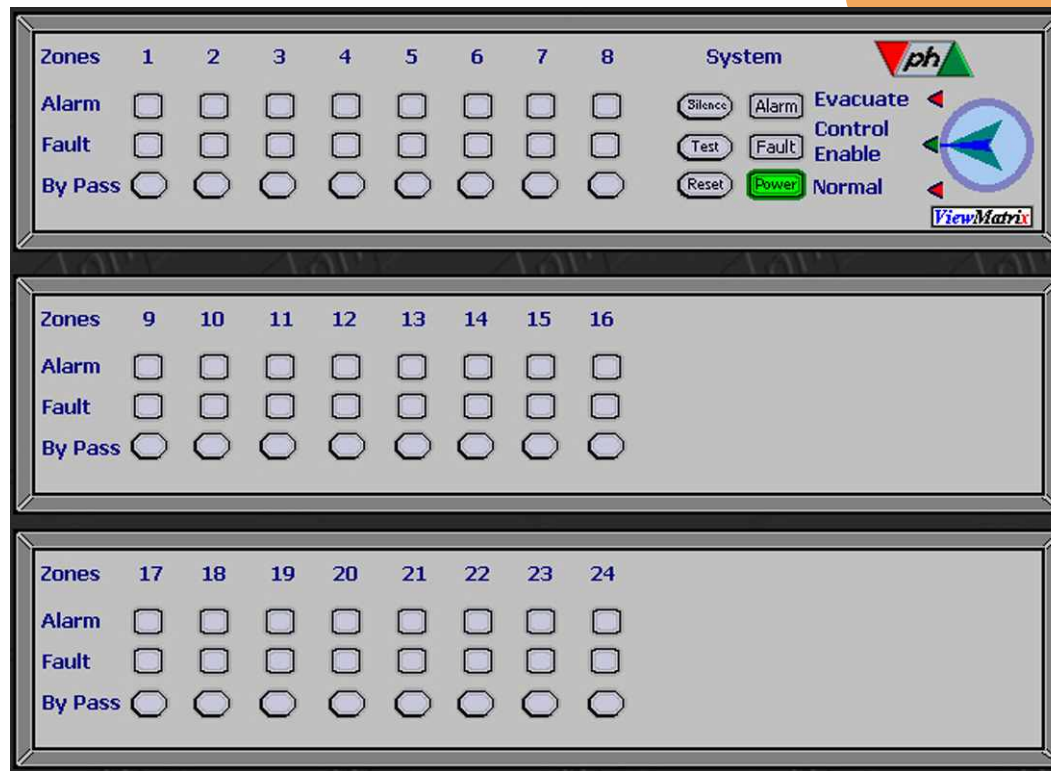


Figure 3: Control panel's keyboard.

3.2 Fault indication - Alarm indication

On top of the Power LED there are LEDs for Fault and Alarm situations. On the left hand side there are two rows of LEDs that will flash in case of alarm or fault situation. Each zone has a corresponding *Zone Alarm* LED and a *Zone Fault* LED underneath it. In case of some faulty situation the *Fault* LED flashes as well as the *Zone Fault* LED that indicates the specific zone with the problem. In case of alarm, the *Alarm* LED is on as well as the *Zone Alarm* LED of the zone that triggered the alarm. We should bear in mind that *Alarm* and *Fault* indications on *ViewMatrix* operate in exactly the same way as on the control panel. If, e.g. we have an alarm from the 4th zone of the panel the LED for *Zone Alarm* of the silicon keyboard of the panel will flash as well as the general *Alarm* LED. At the same time, the corresponding icons on the *ViewMatrix* main page will start flashing in the same way. The sirens start sounding as well. In this case, pressing the *Silence* key makes the sirens stop and the Zones Alarm indication/s remain turned on continuously. They can be turned off by pressing the *Reset* button. All the buttons are active only when the keyswitch is in *Control Enable* position..

3.3 Controls via mimic keyboard

Silence key

In order to stop the sounding of the Buzzer in any case (alarm or fault) and the sirens in case of alarm, the operator user simply has to press the *Silence* key. The *Silence* key, as all the keys of the mimic keyboard on the screen, is active only when the arrow of the mimic key switch is in *Control Enable* position.

Reset key

The *Reset* key is used for resetting the zones of the system in Stand By mode after an alarm. Like all the other keys of the mimic keyboard, it is active only when the arrow of the mimic key switch is in *Control Enable* position.

Zones By Pass keys


The *By Pass* keys are used to isolate a zone in the case that works take place in the building that can cause false alarm or when the connected appliances present some problem or give false alarms. With the key switch in position *Control Enable*, we press the corresponding *Zones By Pass* key which turns on, indicating that the area has been isolated. Resetting in normal mode occurs when pressing the key once again. If one of the keys *Zones By Pass* is turned on (yellow colour) the corresponding zone is isolated and it does not function. In this case, the *Fault* indication is constantly ON and the buzzer sounds every 30 seconds to remind the user of the existing problem. This sound can be disabled clicking on the icon  of the Toolbar.



Figure 4: Password change window.

Evacuate

In case of an emergency the user of *ViewMatrix* has the option to turn the keyswitch to *Evacuate* position. The actual activation of this operation takes place after entering the correct password (authorization procedure). All Zones will go on *Alarm* and Alarm LEDs will start flashing as on the actual control panel. Zones that have been *Bypassed* will not be activated.

3.4 Control of the system - Authorisation


The mimic keyswitch provides access to the 1st and 2nd Access Level of the system in a similar way as the electrical keyswitch of the control panel. The three positions of the keyswitch are:

1st position. (Access Level 1) **Normal**: the system is in normal mode operation ready to accept commands of alarm from the zones or recognize any problem that occurs in the installation.

2nd position (Access Level 2) **Control Enable**: all buttons on the silicon rubber keyboard on the face of the panel are active and we can control the panel.


3rd position: (Access Level 2) **Evacuate**: By turning the key in this position and after a small delay of 2 seconds all the zones of the system go into alarm evacuating mode resulting in the activation of all sirens of the protected area (interrupted mode). Bypassed zones and even number zones of the zone pairs chosen as Cross zoning (par. 6.4 & 6.5) for extinguishing are omitted, in order to avoid useless triggering of the extinguishing systems. The system returns to standby mode turning the mimic keyswitch to *Control Enable* position and pressing the reset button.


In order to perform some action the user needs to be authorized. In *Matrix 2000* the person who holds the key of the electric key switch has authorisation to perform changes to the system. In *ViewMatrix* authorisation check is actually done with the round button on the right hand side with the three states, *Normal*, *Control Enable* and *Evacuate*.

Standard operation is in *Normal* mode. When the user wants to activate the keyboard commands (*Zone/s Bypass*, *Silence*, *Reset*) he just has to click on the *Control Enable* button as he would turn the key on the actual keyboard. A window appears on the screen that asks the user for a password. This happens so as to avoid accidental actions and be fully compliant with the requirements of the European standards. The default value for the password is 1234. **PARADOX HELLAS S.A. strongly recommends changing the default password as soon as possible to avoid unintended use of this software's features.** This can be done by clicking on the corresponding icon  on the Toolbar and following the instructions like in Figure 4.

If the correct password is provided, the keyswitch changes status and grants the authorized user access to level 2. It is only then that the user is granted permission to proceed by activating any button he wants to on the graphical keyboard just as he would on the actual silicon rubber keyboard.

4. Client information field

The second field is placed in the top right corner of the main page of **ViewMatrix**. This is where the installer can input all details that concern information on the installation. These are the name of the owner and his company, address, contact details for the security manager or the port that the program uses to communicate with the PC etc. All fields can be updated with new text or descriptions by clicking on the corresponding icon  of the Toolbar. Next we give a graphical representation of this field.

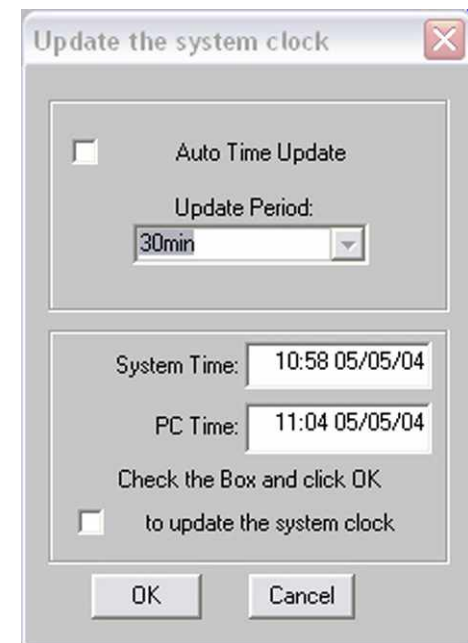
As we can see in Figure 5 there is a field that contains the system time and date. **ViewMatrix** gives the user the option of updating the Real Time Clock at any time by comparing the panels' time with the PC's time and proceeding with any if necessary correction after approval of the user. This can be done by clicking on the clock icon  on the Toolbar. A new window like the one in Figure 5 appears on screen. The user can compare the system time with the computer's time and adjust it to it by checking the appropriate box. to update the system clock

There is also the option of updating it periodically according to the computer's time. Auto Time Update



The image shows a dialog box titled "Client Information". It contains several input fields: "Company Name:" with the value "PARADOX HELLAS S.A.", "Address:" with "3 Korinthou str. Metamorfofi Attica", "Telephone:" with "2102365000", and "Connection:" with "COM2". At the bottom, there is a green text label "System Time: 10:58 05/05/04".

Figure 5: Client information field.



The image shows a dialog box titled "Update the system clock". It has a close button (X) in the top right corner. Inside, there is a checkbox for "Auto Time Update" which is currently unchecked. Below it is a label "Update Period:" followed by a dropdown menu showing "30min". The next section shows two time fields: "System Time:" with the value "10:58 05/05/04" and "PC Time:" with the value "11:04 05/05/04". Below these is the instruction "Check the Box and click OK" and another checkbox for "to update the system clock" which is also unchecked. At the bottom are "OK" and "Cancel" buttons.

Figure 6: System time configuration.

Zone Descriptions	
1 Garage	13 Service Area
2 Reception	14 R&D Area
3 Garage 2	15 Packaging Area
4 Warehouse 1	16 1st Floor
5 Warehouse 2	17 2nd Floor
6 Basement 1	18 Cafeteria
7 Basement 2	19 Power Generator
8 Computer Room	20 Utility Area
9 Training Area	21 External Storage
10 Administration	22 Packaging Storage
11 Manual Production	23 Public Areas
12 Auto Production	24 not available

Figure 7: Zone description field.

Zone Description	
Zone 1: Garage	Zone 13: Service Area
Zone 2: Reception	Zone 14: R and D Area
Zone 3: Garage 2	Zone 15: Packaging Area
Zone 4: Warehouse 1	Zone 16: 1st Floor
Zone 5: Warehouse 2	Zone 17: 2nd Floor
Zone 6: Basement 1	Zone 18: Cafeteria
Zone 7: Basement 2	Zone 19: Power Generator
Zone 8: Computer Room	Zone 20: Utility Area
Zone 9: Training Area	Zone 21: External Storage
Zone 10: Administration	Zone 22: Packaging Storage
Zone 11: Manual Production	Zone 23: Public Areas
Zone 12: Auto Production	Zone 24: not available

OK Cancel


Figure 8: Zone data window.

5. Zone description field

The third field gives the installer the option of describing each zone in the system independently. It is situated on the right hand side under the Client Information field. It consists of up to 24 positions that correspond to the zones of the installation. There is a field named RL next to each zone for the case that the zone has an extra relay output connected on the panel. We should bear in mind that all descriptions are active fields. In case that a zone of the panel (Fig. 7) is activated the corresponding position in the zone description field flashes. The RL field, referring to the extra relay output of the zone, lights out. When the description of the zone is flashing the user can by clicking on it, have another window with the floor plan of the specific zone with all detectors, manual call points and sirens connected to this zone appearing on the screen (Fig. 11). All the fire protection components on this screen (detectors, sirens etc) should also flash, reminding the user that they have been activated.

Next, in Figure 7 we give an idea of how this field would look like on an actual installation.

5.1 Zone Assignment

When the user wants to enter a new description for a zone he does it by clicking on the icon  on the Toolbar or following the procedure *Tools Zone Descriptions* and the schematic of Figure 8 appears on screen. Descriptive names for the zones can be entered in these fields e.g level 1, basement etc. leaving the zones that are not used without names.

ViewMatrix gives the installer user the option of having a schematic view of the area where the fire alarm system is installed. That means having diagrams for each area of the building where the system is applied, with detailed information where the sensors and other system components are placed, the *ViewMatrix* gives the capability of absolute locating of the point of incident. The user has the ability to import up to 24 different floor plans from any drawing software (SmartDraw, AutoCAD, Corel etc.).

In order to import a floor plan we can first go to *Tools Plan Settings* or click on the icon  on the Toolbar. A window like the one in **Figure 9** appears on screen.

If we click on a plan that corresponds to a zone whose floor plan has not been entered , e.g Plan 5 we get a message that no floor plan has been imported for this zone.

The next step in order to import a floor plan is to click on the *Import* button of the Zone Assignment window, the window of Figure 10 appears on screen, where we can find the *.bmp image we wish to import. All those *.bmp files must have been created by the user installer in advance and saved in *bitmap* format.

The selected floor plan is then inserted into our window like in Figure 11

At the bottom of the window there are buttons that correspond to the zones of the installation. The user can view the floor plan that has been entered for the selected zone by clicking on the specific button. For example, if we want zone

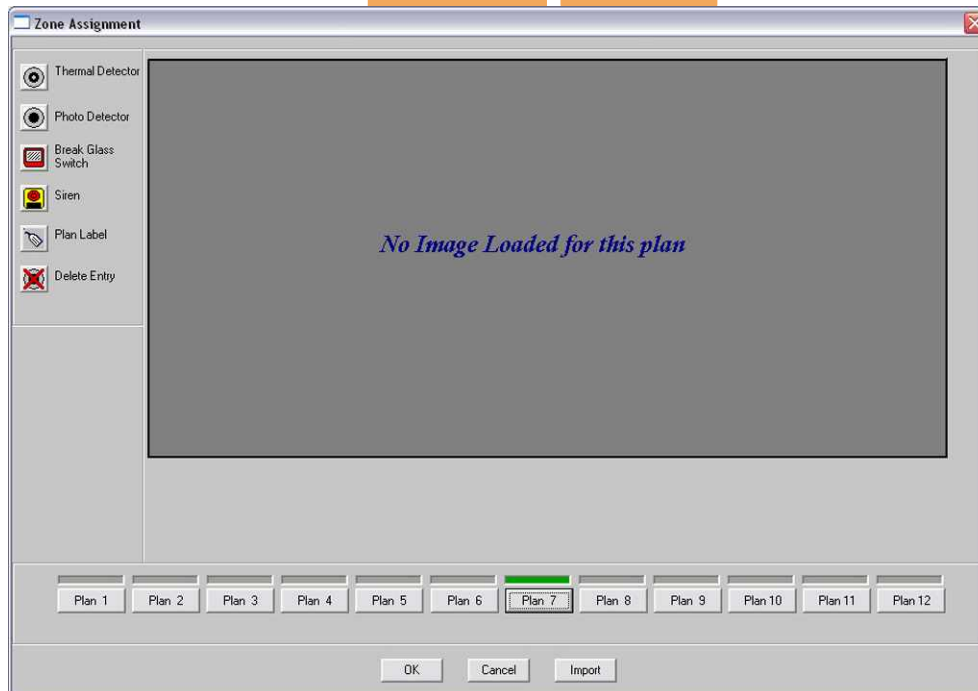


Figure 9: Zone Assigment window

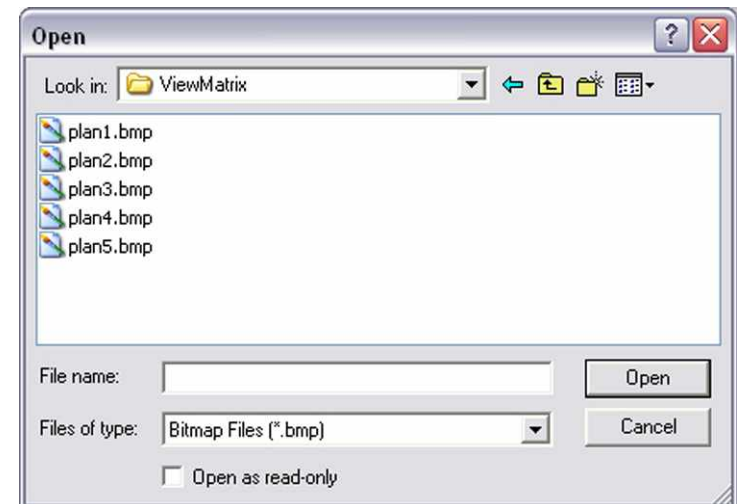


Figure 10: File open window.

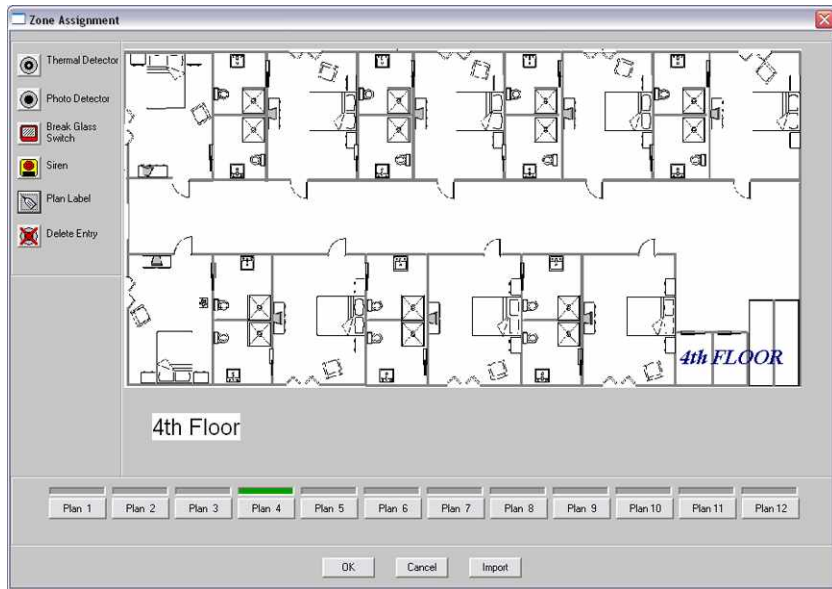


Figure 11: Floor plan.

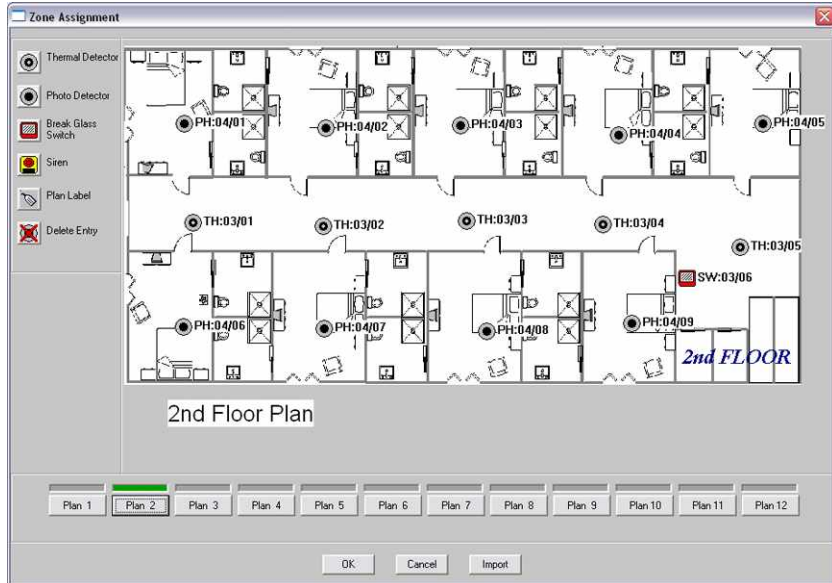


Figure 12: Full floor plan.

2 to be called level 2 and we wish to see the floor plan all we have to do is click on Plan 2. *ViewMatrix* gives us the option to insert detectors, sirens and other components of the system on the floor plan. There are icons that represent photo detectors, thermal detectors, break glass switches, sirens etc. The user can click on the icon that represents a photo detector for example and then place it on the floor plan. There is also a “plan label” button that allows the user installer enter some text on the floor plan (max. 60 characters).

This way he will have a full idea of the actual installation. Next we present a floor plan including all the components of the fire protection system.

6. System setup representation

The fourth field is where the overall setup of the system is graphically represented. It represents the four dipswitches that are placed on the main board of the control panel. This way the user knows which dipswitches are enabled and which are not. As a result the user is capable of knowing with a simple glance which features of the panel are enabled. **Figure 13** provides us with a view of this field on *ViewMatrix* main page.

Any change to the setup of the system through the microswitches is mapped on this field almost instantly. This field is also active; the user can click on a switch and bring a new window with the dipswitch setup analytically described. **Figure 14** shows the window with the more detailed description of the system settings.

Therefore the user can be aware of the actual system settings. Then the installer can consult the **Matrix 2000** manual and decide upon changes he may want to make. The next step is to go to the panel and make all the changes to the dipswitches that lie inside it.

NOTICE : The user can **NOT** change the setup of the system through the **ViewMatrix**. This can only be done from inside the panel by changing the dipswitches by the engineer of the installation.

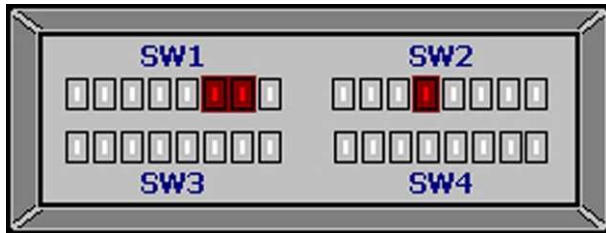


Figure 13: System settings.

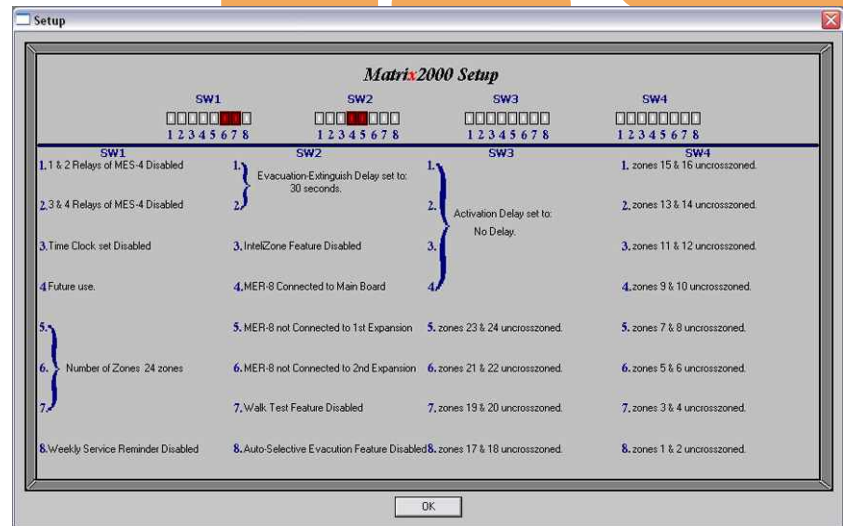




Figure 14: Dipswitch settings.

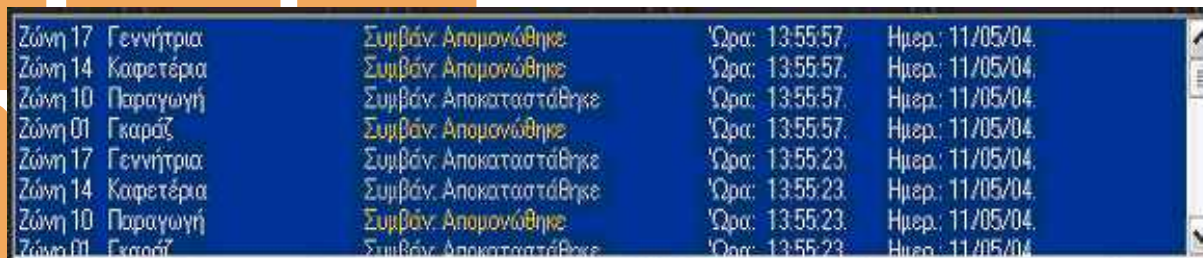
7. System events log

ViewMatrix has a feature that provides the user with information on the communication between the *Matrix 2000* control panel and *ViewMatrix*. It is the fifth field of the main page located under the first one (keyboard). The program presents there all the events that take place during the operation of the system, for example a Zone Isolation or System Reset. All events are logged in time sequence fully described by the place where the event occurred, description of the event, time and date. An example of this is shown in Figure 15.

The number of events that are currently shown on the PC screen and the colours of the log area can be adjusted by clicking on the corresponding icon  on the Toolbar. This is shown in Figure 16. As far as the number of events shown is concerned, it is advisable not to be more than 200.

All events are recorded on the hard disk drive (HDD) of the monitoring PC. In case there is no PC connected to the panel (loss of connection, PC reset etc) for some time, *Matrix 2000* can store up to 1024 events in its internal memory. These events can be retrieved by uploading them to a PC with the *ViewMatrix* software as soon as connection is established. On running *ViewMatrix* the PC will check for any NEW events that are not recorded in its HDD. If it finds any new events it uploads them and stores them into the HDD. The user can also upload the events using the corresponding icon  on the Toolbar in case he wants to check something on the operation of the system.

For any additional information, clarification or suggestion that concerns the *ViewMatrix* manual or the *Matrix 2000* series fire alarm panels, please contact our sales dept. at tel. No. +30 2102855000 or email us at sales@paradox.gr.



Ζώνη 17	Γεννήτρια	Συμβάν. Απομονώθηκε	Ώρα: 13:55:57	Ημερ.: 11/05/04
Ζώνη 14	Καφετέρια	Συμβάν. Απομονώθηκε	Ώρα: 13:55:57	Ημερ.: 11/05/04
Ζώνη 10	Παραγωγή	Συμβάν. Αποκαταστάθηκε	Ώρα: 13:55:57	Ημερ.: 11/05/04
Ζώνη 01	Γκαράζ	Συμβάν. Απομονώθηκε	Ώρα: 13:55:57	Ημερ.: 11/05/04
Ζώνη 17	Γεννήτρια	Συμβάν. Αποκαταστάθηκε	Ώρα: 13:55:23	Ημερ.: 11/05/04
Ζώνη 14	Καφετέρια	Συμβάν. Αποκαταστάθηκε	Ώρα: 13:55:23	Ημερ.: 11/05/04
Ζώνη 10	Παραγωγή	Συμβάν. Απομονώθηκε	Ώρα: 13:55:23	Ημερ.: 11/05/04
Ζώνη 01	Γκαράζ	Συμβάν. Αποκαταστάθηκε	Ώρα: 13:55:23	Ημερ.: 11/05/04

Figure 15: *ViewMatrix* log area.

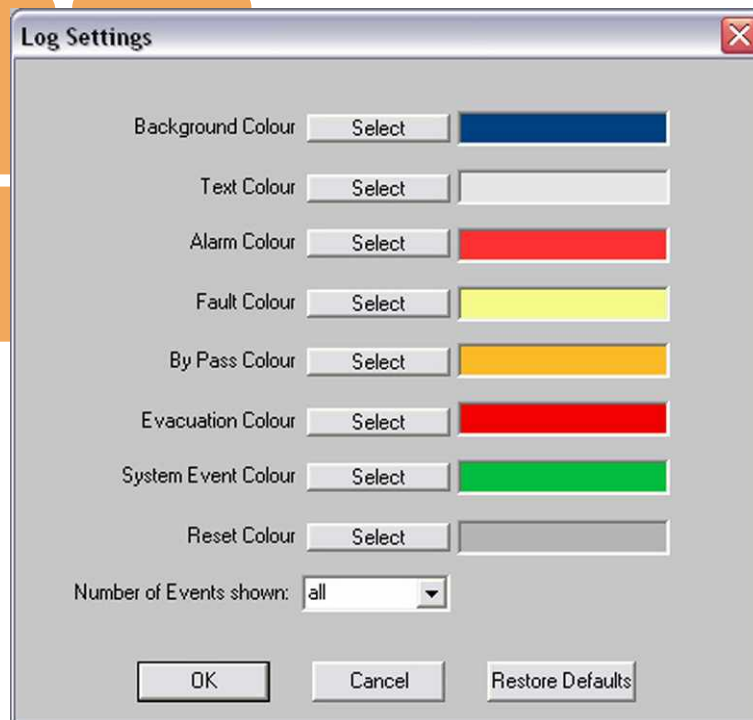


Figure 16: Log area settings.