The Kontrol & Kommand 8 or 16 channel Relay Interface provides the facility to manually initiate from 1 to 8/16 dry contact switches via an RS232 or RS485 output for permanent or timed duration using the Alien DVR client software CCTVWindow released from August 2012. An example of its use can be to control the release of a solenoid door lock for a stipulated time period or control the Voice Off unit.
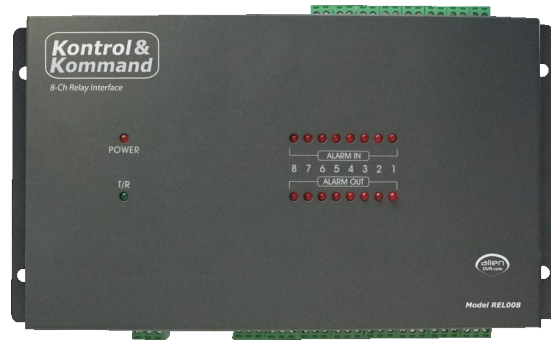
General Information

The REL008/16 Relay Interface has 8/16 alarm inputs and 8/16 alarm outputs. The unit must be powered using a regulated 12vDC power supply and current draw is approximately 550mA/2A. The alarm unit can accept either RS232 or RS485 control and has binary dipswitches to specify the baud rate, protocol and allow up to 31 alarm devices to be addressed. Output relays can switch a maximum of 1A at 12v DC. Mains voltage at 230v AC must not be connected.

Setup Information

The REL008/16 Relay Interface is supplied with a 12vDC 1A/2A regulated power supply with 2.1 Power Jack connection and RS232 cable. It supports both RS485 and RS232.

When the relay is first connected to the 12vDC power supply it will perform a self test by sequencing through each alarm channel. The red power LED should be illuminated.

LED Displays
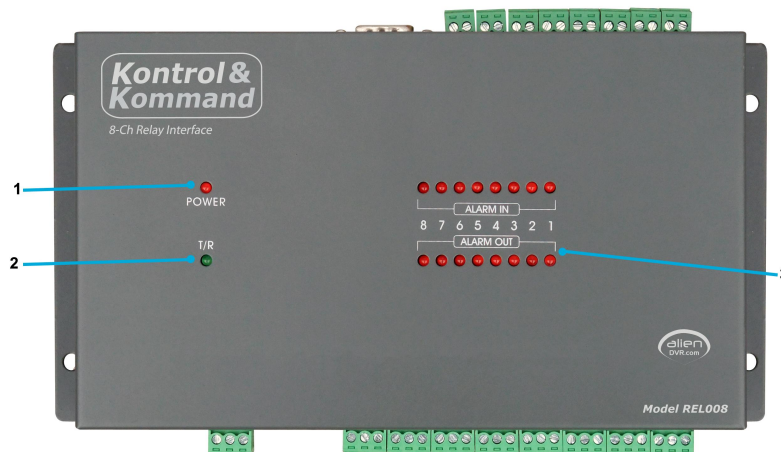
1. Power: Power LED   The red LED illuminates when power connected.

2. T/R: Communication LED   The green LED flashes when working normally.

3. Alarm Output: Alarm Output LED   The red LED illuminates when output initiated.

Front and Rear Connections
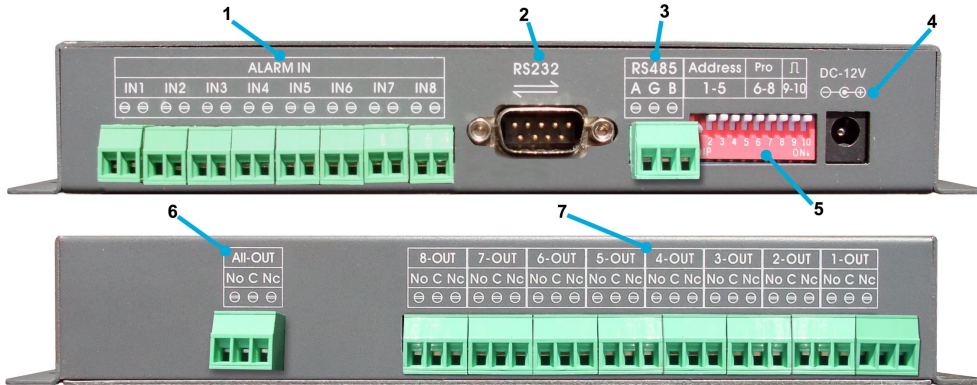
1. **Alarm In**   Control using alarm inputs (**These are disabled**)

2. **RS232**   Control using RS232 - Interface with Voice Off unit etc.
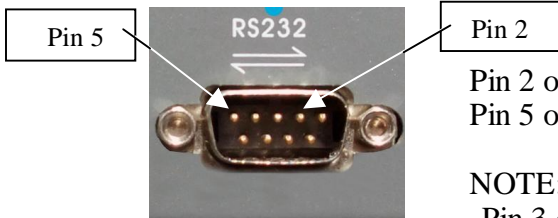
Pin 2 on Relay is RX
Pin 5 on Relay is Ground

NOTE: Alien DVR RS232
 Pin 3 on DVR is TX
 Pin 5 on DVR is Ground

3. **RS485**   Control using RS485   Interface with PTZ cameras etc.

A is RS485 +
B is RS485 -
G is RS485 ground

4. **12vDC Power**   Current draw 12vDC 550mA/2A
      12vDC PSU is supplied with Relay Unit.

5. Dipswitches   Dip1 value = 1 , Dip 2 value = 2 , Dip 3 value = 4
         Dip4 value = 8 , Dip 5 value = 16

     ID Address   Dipswitches 1 ~ 5   (Allows up to 31 binary addresses)
         ID 1   - dipswitch 1 down - all other switches up (OFF)
         ID 2   - dipswitch 2 down - all other switches up (OFF)
         ID 3   - dipswitch 1 and 2 down - all other switches up (OFF)
         ID 4   - dipswitch 3 down - all other switches up (OFF)
         ID 5   - dipswitch 1 and 3 down - all other switches up (OFF)
         ....etc
         ID31 - dipswitches 1 ~ 5 down

     Protocol   Dipswitches 6 ~ 8   dipswitch 6 down - all others up (OFF)

     Baud Rate   Dipswitches 9 ~ 10   (Select from 2400, 4800, 9600, 19200bps)
         Baud Rate 2400   - dipswitches all up (OFF)
         Baud Rate 4800   - dipswitch 9 down and 10 up (OFF)
         Baud Rate 9600   - dipswitch 10 down and 9 up (OFF)
         Baud Rate 19200   - dipswitch 9 and 10 down

6. Alarm All Out   Not Used

7. Alarm Out Program Trigger programmable alarm output using RS232 or RS485.
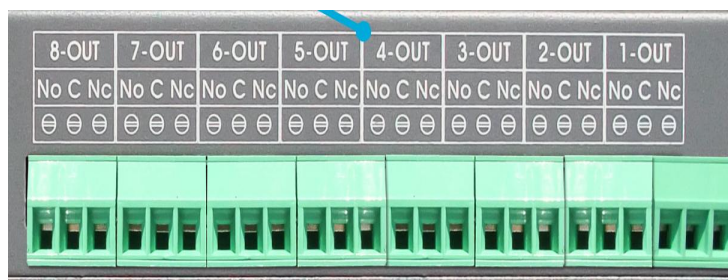
     No - Normally Open
     Nc - Normally Closed
     C   - Common ground

Kommand & Kontrol

Functionality is provided to use the RS232 port or the RS485 port on an Alien DVR to interface with the relay unit.

RS232 provides one-to-one connectivity so only two devices can be connected together. RS232 has transmission distance limitations but this is related to baud rate and cable quality. RS232 has been tested successfully on 100 metres of CAT5 at 2400 baud rate using 2 cores of the same pair.

Note: The VoiceOff box only runs at 9600 baud rate and only on RS232.

RS485 provides up to 31 devices in parallel and transfer distance is dependent on cable quality and transmission baud rate. If used on 2400 baud rate the maximum theoretical transmission distance is 1500 metres.

The Kommand and Kontrol function

The current products that can be used with this control function are the VoiceOff unit <u>and</u> the Alarm Relay control unit. The VoiceOff unit currently works on RS232 only but the Alarm unit works on both RS232 and RS485, so both may connected simultaneously, the VoiceOff on RS232 and the Alarm unit on RS485. Other external devices may also be controlled using RS232 or RS485 command strings. To view the following Control panel via 'Preview' ensure that the DVR has been selected and is accessible via the network. Then press the Kontrol button.
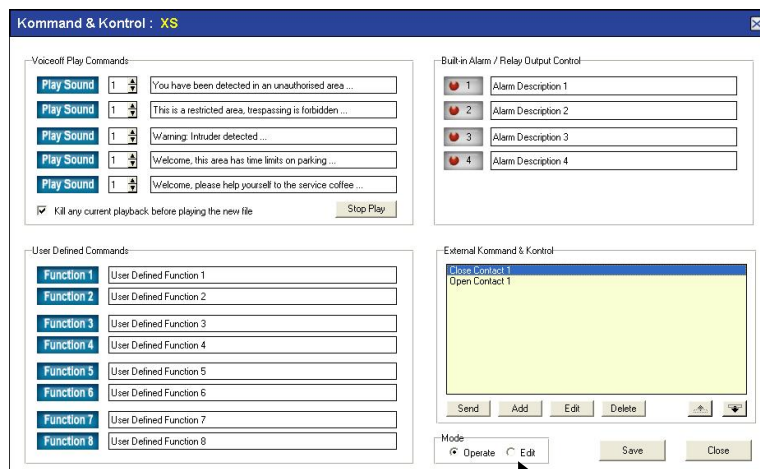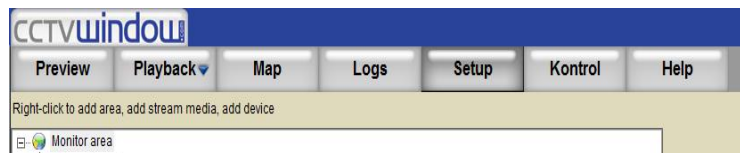
The above screen is displayed. This is the normal view an operator will see. Now press the Mode Edit button. See the Serial Port Options displayed:
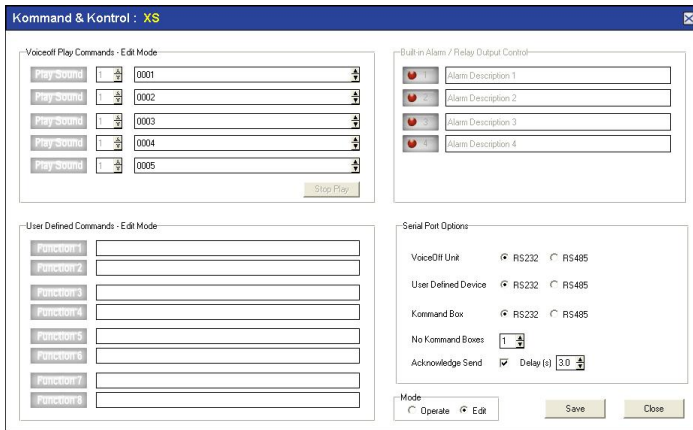
Ensure that the correct RS232 or RS485 selection is made for the required device.

Note that only one device is used on an RS232 connection.

Therefore 'No. Kommand Boxes' are only 1 for RS232 but up to 31 for RS485.

The 'Acknowledge Send' if ticked will display a message confirming that the DVR has processed your command.

The Delay in seconds is the time that the display will stay on screen. If you set value to 0 it will stay on screen until removed.
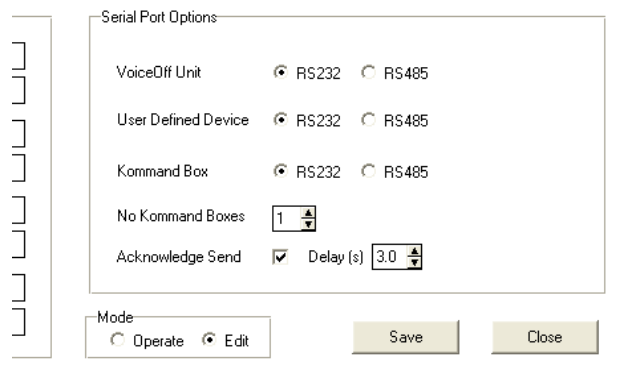

RS232 VoiceOff functionality

Note that RS232 transmission distance depends on baud rate and cable quality.

Connect the VoiceOff unit to the RS232 connection on the DVR. Now set the RS232 settings in the CCTVWindow Remote Settings or in the DVR RS232 menu.

To enter Remote Settings, click on Setup, single click the DVR icon under the World icon and single click Remote Settings. Then click on Serial Port Settings and select RS232 Settings.

Set the following parameters:

|	
Bits Per Second	9600
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
Working Model	Transparent Channel
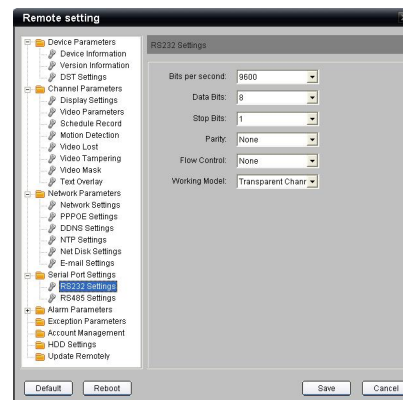
Using the Kommand & Kontrol menu you can manually trigger a VoiceOff recording, selecting from up to 9999 different recordings.

VoiceOff Play Commands
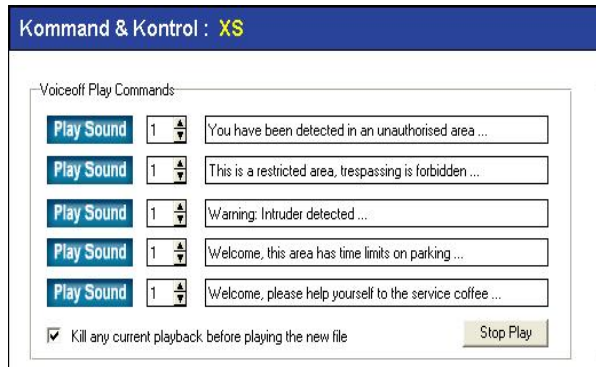
The VoiceOff Play Commands section is for manually triggering one of the recordings saved on the SD card. You have five selections that you can make. Enter the number of times you require the recording to be triggered using the up down selection keys and enter a brief reminder as to what the recording is about. You can also tick the box if required to 'Kill any current playback before playing the new file.' Note that if you do not kill current playback, nothing will happen. You now need to enter the record file sequence number by pressing the Edit button as below.
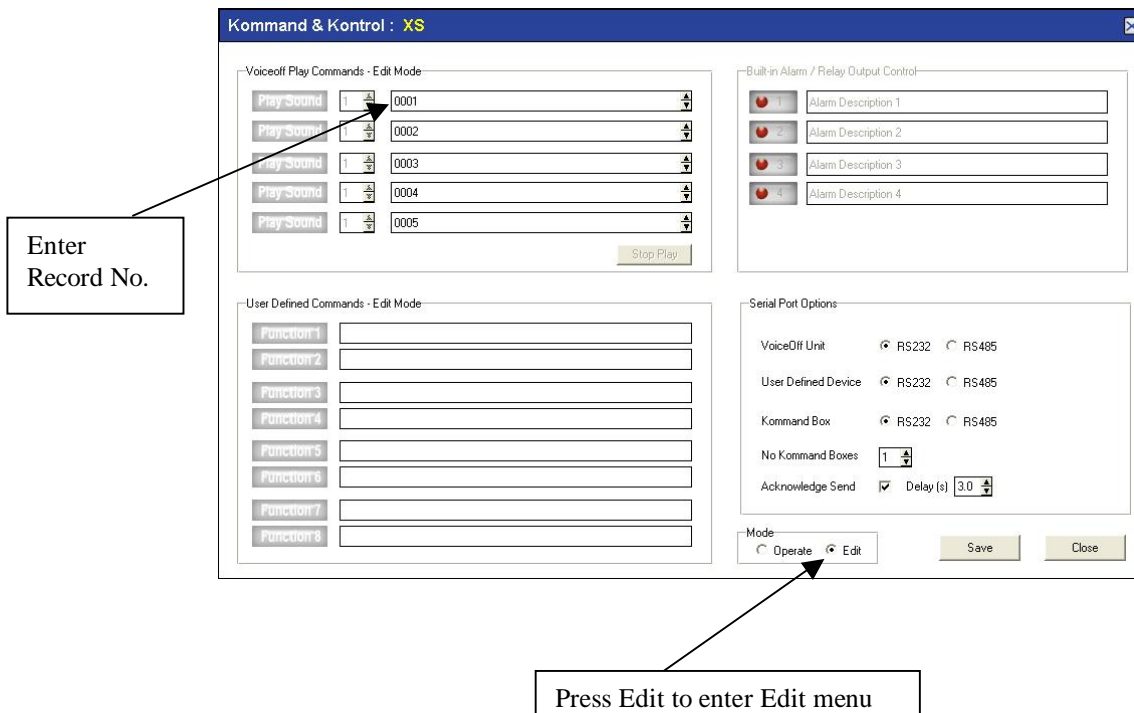
Enter the Record trigger file number required on the SD card in the VoiceOff unit. Click on Save and press the Play Sound button to play the file. As previously stated this section only provides for five file selections.

User Defined Commands – Edit Mode

The VoiceOff Play Commands box is specifically used for manually triggering VoiceOff commands. If however more than five different recordings need to be selected, then use of the User Defined Commands box which can also be used for triggering other types of equipment, can also be used to trigger a further eight VoiceOff commands. Note that the parameter formats are different here as they can apply to a variety of equipment that will take an RS232 command, so if used for the VoiceOff unit the following command strings will require setting up. Note that the option to 'Kill any current playback before playing the new file' is not available here, but the same result can be obtained by sending two command strings, the first to Stop Playback and the second to play the recording. Refer to the table below:

RS232 Commands			
RS232 Command	**Action**	**Command to Stop**	**Example**
SQPlaynnFxxxx	Play File	SQStop	Where nn = number of times to play and xxxx = the file number to play e.g. SQPlay15F0002 play file 0002.mp3 15 times.
SQRepeatFxxxx	Play File Continuously	SQStop	SQRepeatF9999 play file 9999.mp3 indefinately.
SQStop	Stop playback	N/A	SQStop stop file playback whether it was started using SQPlay, SQRepeat or from the input terminal strip.

The following example shows how to trigger file number 35 in a VoiceOff unit using a User Defined Command: **SQPlay01F0035**

The following example also shows how to cancel the current file and then trigger file number 10 twice in a VoiceOff unit using two User Defined Commands: **SQStop SQPlay02F0010**

Press the Function button to initiate the trigger.

Kommand & Kontrol

If you require to select from a larger number of VoiceOff triggers greater than 13 i.e
(5 Play Commands and 8 User Defined Commands) then you can use the External Kommand and
Control. Note that 2 default settings are included. Close Contact 1 and Open Contact 2. These can
be removed, amended or added to, but if all commands are removed the Close Contact 1 and Open
Contact 2 commands will be automatically replaced.
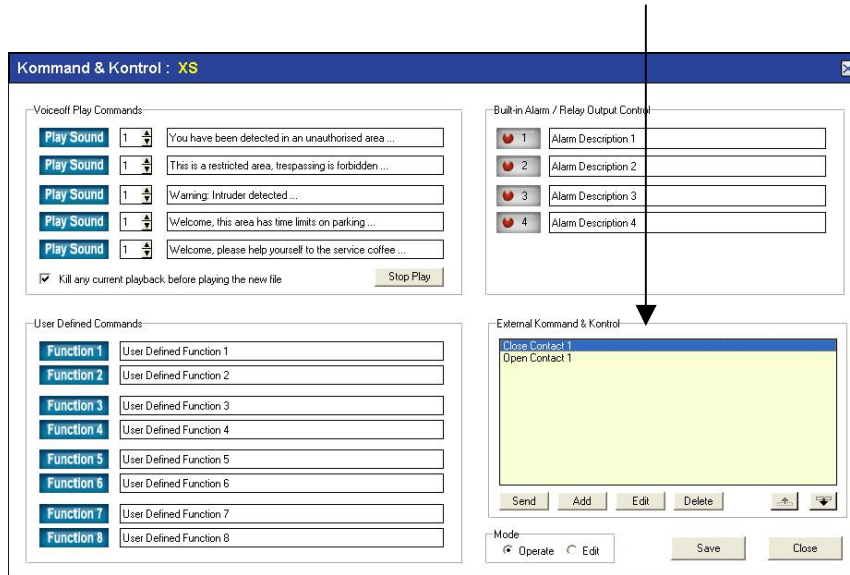
In this section you can set triggers for the VoiceOff unit ranging from 0001 ~ 9999.
First press the Add button.

Amend the Description (include the file number for easy reference), change the Kommand to a
format required by the VoiceOff unit and then press Add Kommand. This will then be displayed in
the Final Kommand List. You may add a list of Kommands and do a Save at the very end, so you do
not lose the Kommand Definition screen. Do not change any settings in the Kommand Options field
for the VoiceOff unit.   See sample below:
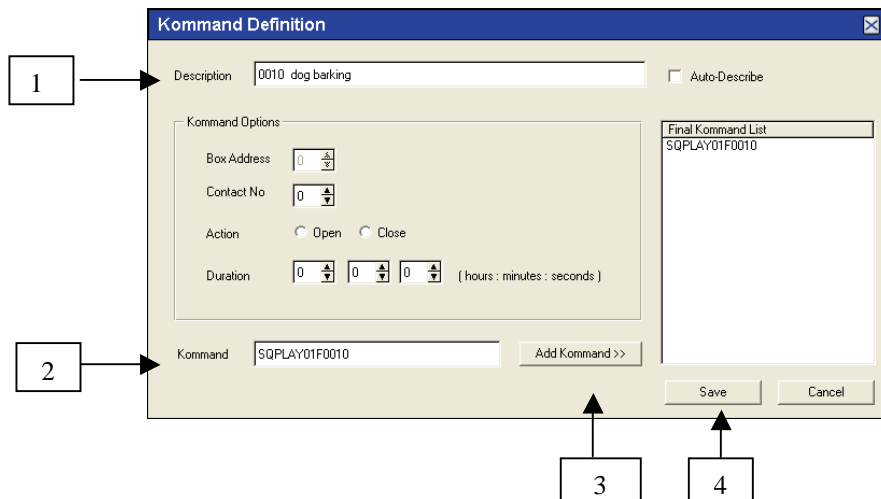
The following example shows a list of the commands set.
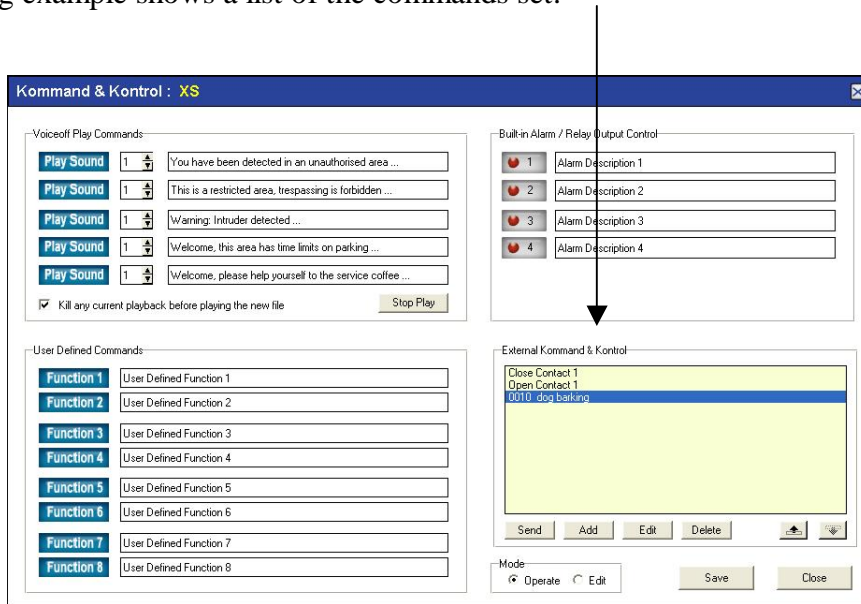
To initiate a trigger in the External & Kontrol list, highlight the command and click on Send. A message will display when sent. Use the Delete button to remove a trigger and the Edit button to change a trigger. The up and down arrow keys are for scrolling through the list.

RS485 VoiceOff functionality

This is currently under investigation and not yet available on the VoiceOff unit. It is noted here for future compatibility.


RS232 Kommand Box alarm relay control unit

Note that RS232 transmission distance depends on baud rate and cable quality.
**Transmission distance successfully tested on 100 metres of CAT5 cable.**

Connect the Kommand Box to the RS232 connection on the DVR. Now set the RS232 settings in the CCTVWindow Remote Settings or in the DVR RS232 menu.

To enter Remote Settings, click on Setup, single click the DVR icon under the World icon and single click Remote Settings. Then click on Serial Port Settings and select RS232 Settings.

Set the following parameters:

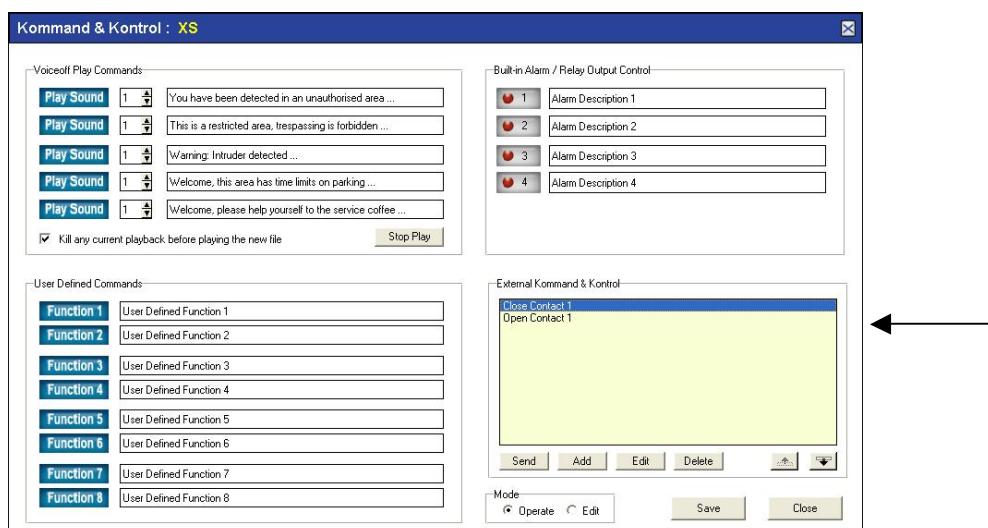|	
Bits Per Second	2400
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
Working Model	Transparent
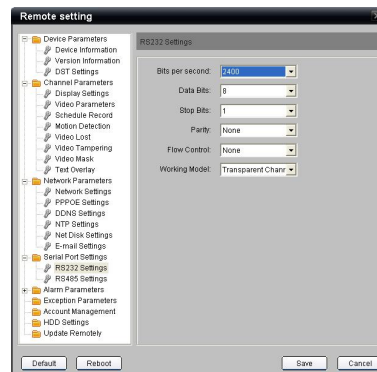
If you are using the Kommand Box you will need to ensure that it is set for RS232 settings. Enter CCTVWindow, Click on device and then Control and then select Mode Edit button to display the following screen.
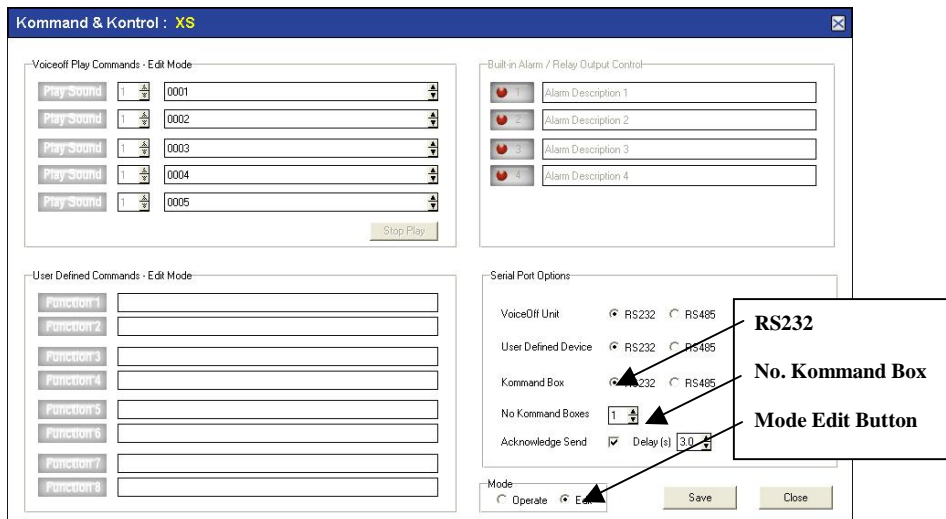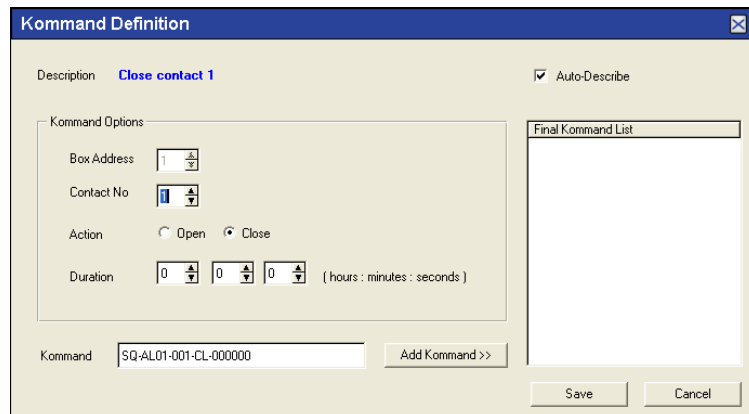
Note that Kommand Box must be ticked for RS232 and as RS232 is a serial protocol, only one Kommand Box can be set. Save the settings and click on Operate button.

Note that two default settings are included. Close Contact 1 and Open Contact 2. These can be removed, amended or added to, but if all commands are removed the Close Contact 1 and Open Contact 2 commands will be automatically replaced.

In this section you can set triggers for the Kommand Box dependent on the number of alarms the Kommand Box handles.

First press the Add button.

In Kommand Options you will see an Auto Describe box ticked. This option will automatically create a Description of the command entered in the Kommand line. Note that multiple commands may not describe the command type accurately so untick the Auto-Describe to manually enter your own description.

The Kommand line shows a default format : SQ-AL01-001-CL-000000
This is built using the Kommand Options panel.

Box Address: You will notice that the Box Address is greyed out. This is because the setting is an RS232 and not RS485 and only one device can be used on RS232.

Contact No: This is the alarm contact number in the Kommand Box.

Action: This states whether the alarm contact is open or closed.

Duration: The total time the trigger is to be set in HHMMSS (Hours / Minutes / Seconds).

When you enter the above values the Kommand is created in the Kommand field.
SQ-AL<**uu**>**-**<**nnn**>**-**<**xx**>**-**<**hhmmss**>

SQ-AL	=	Fixed parameters
<**uu**>	=	Box Address - Alarm Box Number
-	=	Fixed parameter
<**nnn**>	=	Contact No. - Alarm Contact Number
-	=	Fixed parameter
<**xx**>	=	CL is Closed contact or OP is Open contact
-	=	Fixed parameter
<**hhmmss**>	=	Hours / Minutes / Seconds

Now click the Add Kommand button and the command line will be displayed in the Final Kommand List. Then click Save.

Note that more than one command can be entered in a command string, but commands are sorted into order by Box Address, Contact Number, Closed or Open and Time. Also if you were to set two similar commands just with different timescales the longest time would supersede the shorter timescale. The maximum number of individual commands in a command string is 16.

RS485 Kommand Box alarm relay control unit (Recommended BPS = 2400)

RS485 provides up to 31 devices in parallel and transfer distance is dependent on cable quality and transmission baud rate. If used on 2400 baud rate the maximum theoretical transmission distance is 1500 metres. Note that the Kommand Box has been designed to run at 2400 bps.

Connect the Kommand Box unit to the RS485 connection on the DVR. Refer to the Kommand Box instructions for the necessary dipswitch and alarm connections.

Now set the RS485 settings in the CCTVWindow Remote Settings or in the DVR RS485 menu. To enter Remote Settings, click on Setup, single click the DVR icon under the World icon and single click Remote Settings. Then click on Serial Port Settings and select RS485 Settings.
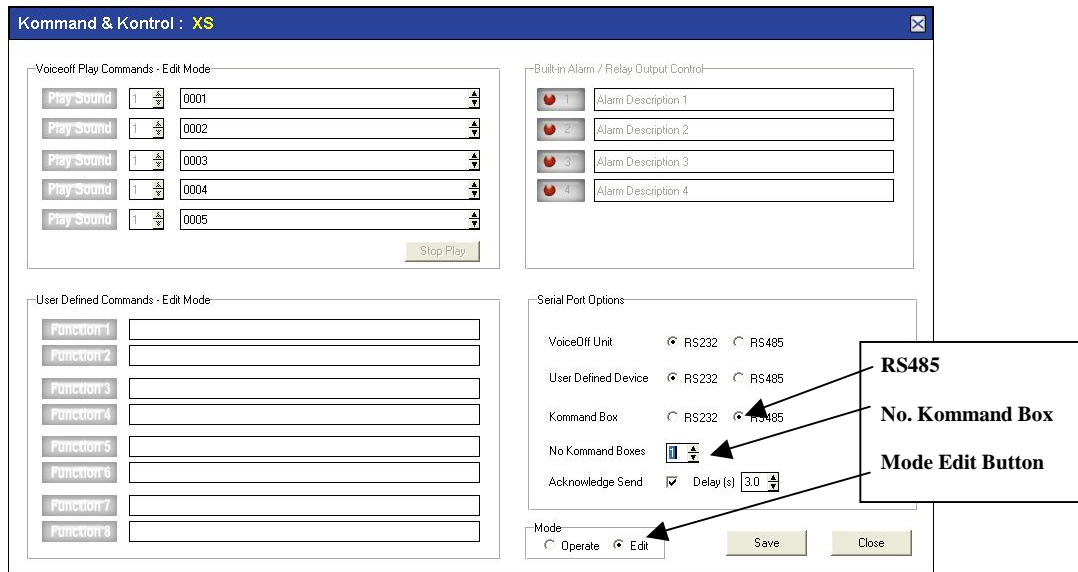
Set the following parameters:

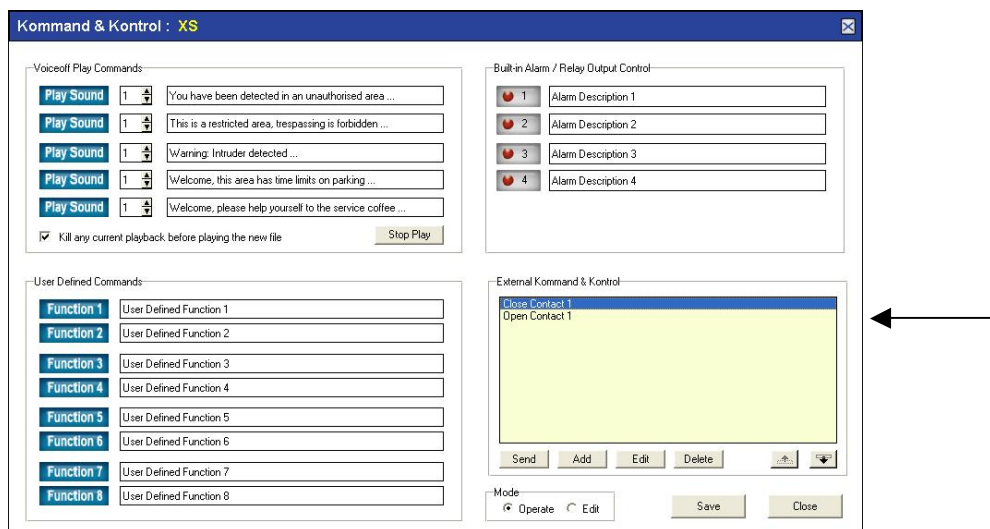|	
Channel No:	1
Bits Per Second	2400
Data Bits	8
Stop Bits	1
Parity	None
Flow Control	None
Protocol	N/A
PTZ address	N/A

Click on Save.
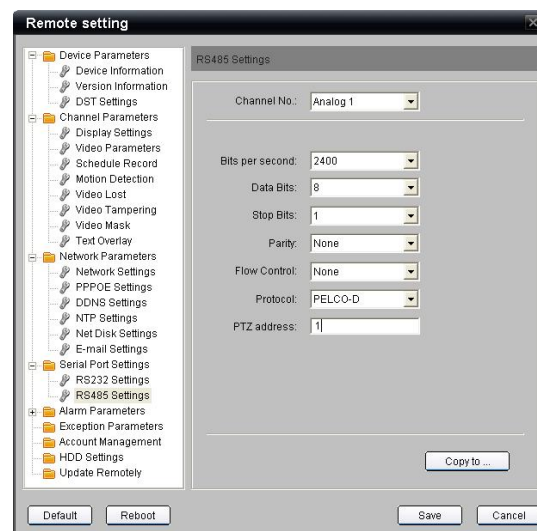
If you are using the Kommand Box you will need to ensure that it is set for RS485 settings. Enter CCTVWindow, Click on device and then Control and then select Mode Edit button to display the following screen.
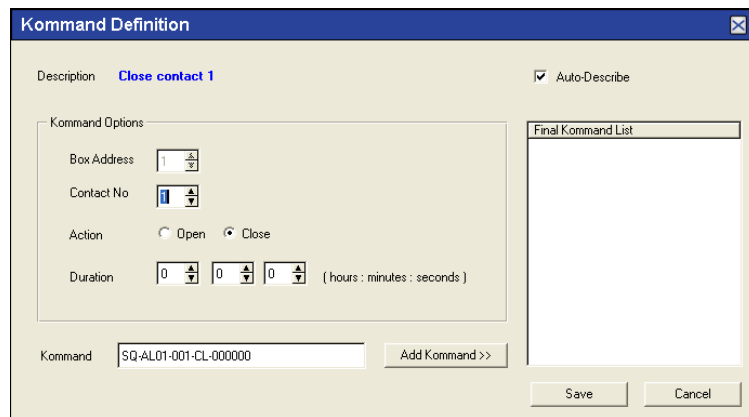
Note that Kommand Box must be ticked for RS485 and as RS485 can service up to 31 devices, the Kommand Box can be set between 1 ~ 31. This value is duplicated in the Kommand Box by setting the Address field to the corresponding binary value. Save the settings and click on Operate button.

Note that two default settings are included. Close Contact 1 and Open Contact 2. These can be removed, amended or added to, but if all commands are removed the Close Contact 1 and Open Contact 2 commands will be automatically replaced.

In this section you can set triggers for the Kommand Box dependent on the number of alarms the Kommand Box handles.

First press the Add button.

In Kommand Options you will see an Auto Describe box ticked. This option will automatically create a Description of the command entered in the Kommand line. Note that multiple commands may not describe the command type accurately so untick the Auto-Describe to manually enter your own description.

The Kommand line shows a default format : SQ-AL01-001-CL-000000
This is built using the Kommand Options above.

Box Address: You will notice that the Box Address can be changed from 1 ~ 31. This is because RS485 allows up to 31 devices to be controlled rather than only one on RS232.

Contact No: This is the alarm contact number in the Kommand Box.

Action: This states whether the alarm contact is open or closed.

Duration: The total time the trigger is to be set in HHMMSS (Hours / Minutes / Seconds).

When you enter the above values the Kommand is created in the Kommand field.
SQ-AL⟨**uu**⟩**-**⟨**nnn**⟩**-**⟨**xx**⟩**-**⟨**hhmmss**⟩

SQ-AL	= Fixed parameters
⟨**uu**⟩	= Box Address - Alarm Box Number
-	= Fixed parameter
⟨**nnn**⟩	= Contact No. - Alarm Contact Number
-	= Fixed parameter
⟨**xx**⟩	= CL is Closed contact or OP is Open contact
-	= Fixed parameter
⟨**hhmmss**⟩	= Hours / Minutes / Seconds

Now click the Add Kommand button and the command line will be displayed in the Final Kommand List. Then click Save.
Note that more than one command can be entered in a command string, but commands are sorted into order by Box Address, Contact Number, Closed or Open and Time. Also if you were to set two similar commands just with different timescales the longest time would supersede the shorter timescale. The maximum number of individual commands in a command string is 16.

Typical Connection Diagram
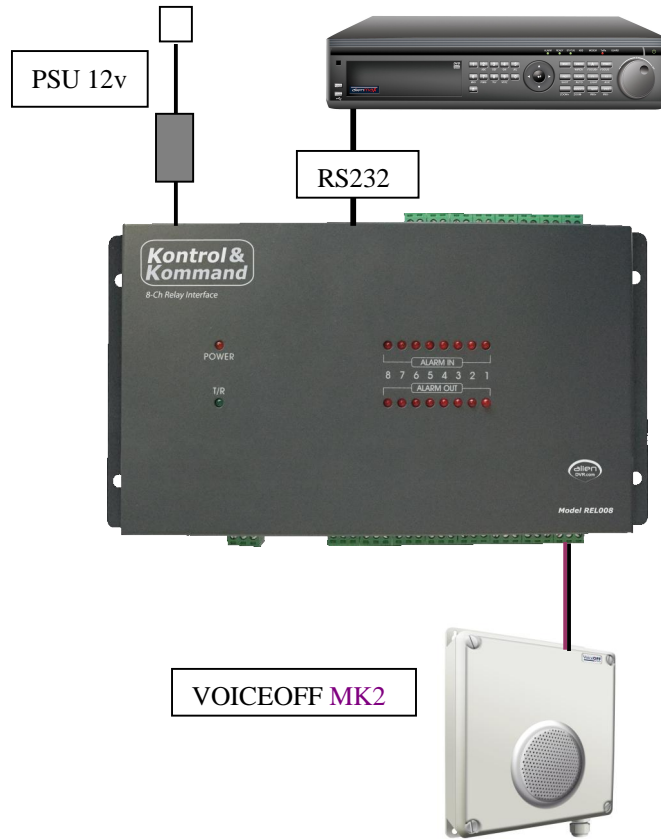
Technical Specification

Model	REL008	REL016
Output Alarms Programmable	8	16
RS485 Interface	1	1
RS232 Interface	1	1
Input Alarms	Not Applicable	
All Out Public Alarm	1	1
Protocol	Alien	
Baud Rate	2400bps, 4800bps, 9600bps, 19200bps	
Relay	5A 277vAC, 6A 125vDC	
ID	1 ~ 31	