



VisualSoft Suite User Manual

VisualOverlay (for VisualDVR Legacy Edition) 11.0



Published: 21 February 2023

© 2023 Forum Energy Technologies

Table of Contents

Part 1 VisualOverlay	5
1 Introduction	5
2 Video Overlay	7
3 VisualOverlay Quick Start Hardware Setup	8
Quick Start: Hardware Setup for Videum Duo and Quattro with Breakout Cable	8
Quick Start: Hardware Setup for Videum Duo and Quattro with Breakout Box	9
Wiring Options: Vitec SD VM-OSD Breakout Cable.....	10
Vitec VM-OSD SD Overlay Card Breakout Cable.....	12
Wiring Options: Vitec VM2-C7 & VM2-C8 SD Overlay Breakout Cable.....	14
Vitec SD (VM2-C7 & VM2-C8) Overlay Card Breakout Cable.....	17
Quick Start: Hardware Setup for Optibase MovieMaker 230	19
Quick Start: Hardware Setup for Osprey HD	21
Quick Start: Hardware Setup for Vitec 7440 HD	22
Quick Start: Using a Separate VisualOverlay PC	22
4 VisualOverlay Quick Start Software Setup	23
Quick Start: Opening the Overlay Configuration	23
Quick Start: Overlay Configuration Screen	23
Quick Start: Drag and Drop	24
Quick Start: Configure an Overlay	24
5 Overlay Devices	25
Hardware Overlay Devices	25
Vitec VM-OSD SD Overlay Card.....	25
Vitec VM2-C7 SD Overlay Card.....	25
Vitec VM2-C8 SD Overlay Card.....	26
Vitec VMC-7440 HD Overlay Card.....	26
Videum Duo SD Encoder/Overlay Card.....	26
Videum Quattro SD Encoder/Overlay Card.....	26
Software Overlay Devices	27
RogueStream	27
6 Screen Layouts	27
Creating a Screen Layout	27
7 Screen Items	28
8 Items	28
Data	28
Text Labels	28
Creating New Text Labels.....	29
Images and Icons	29
Creating New Images or icons.....	29
9 Interfacing Extra Equipment to VisualOverlay	30
Sensor Interfaces	30
ASCII Input	31
10 Working with a Multi-Channel VisualDVR	36
Configure Multiple Overlay Devices	36
Configure Multiple Screen Layouts	36
11 Setting Default Screen Properties	37
Screen Name	37
Text Font and Colour	37

Default Text Layout Options	39
Default Screen Update Options	40
12 Formatting Data Fields	40
Text Formatting	40
Time and Date Formatting	41
Number Formatting	45
Number Formatting Examples	45
Formatting: Control Codes.....	45
Formatting: Type Specification.....	46
Formatting: Flag Specification.....	47
Formatting: Width Specification.....	48
Formatting: Precision Specification.....	48
Formatting: Prefix or Suffix Text.....	49
13 Positioning Data Fields	49
14 Running VisualOverlay on a Standalone PC	51
Hardware Setup: Video Input and Output	51
Software Setup: Survey String on VisualDVR Unit	51
15 Hardware Overlay Emulator	52
Part 2 Contact Details	52
1 Contact Details – Support	52
2 Contact Details – Sales	54
Index	55

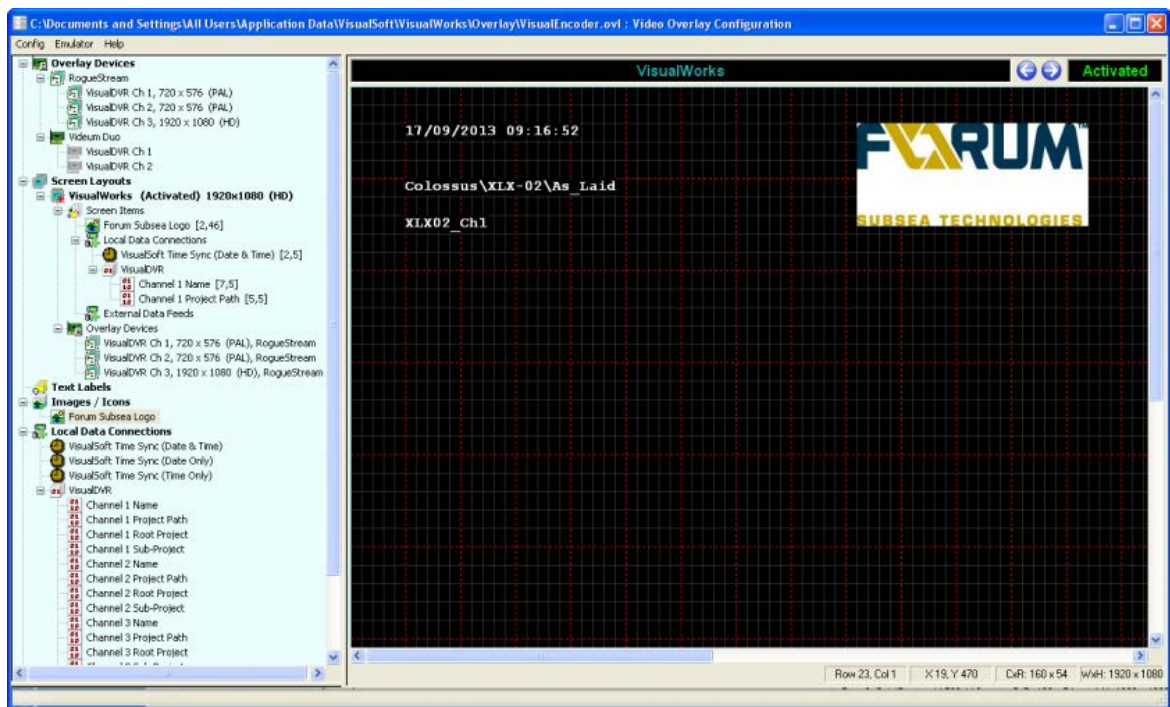
1 VisualOverlay

1.1 Introduction

VisualOverlay is a free to use part of the VisualSoft Suite, that allows data to be added to an incoming video signal; either from a data string sent from survey software, or from a set of preconfigured overlay options.

The application can be run from within the VisualDVR application ,or in standalone mode.

VisualOverlay allows the addition of text labels, titles and images to produce a more complete recorded video for the end user.



Key Features of VisualOverlay

- User friendly, Drag-and-Drop configuration
- Superior text and logo display
- Use any Windows font or text colour
- Supports hardware overlay cards, video encoder cards with inbuilt overlay, and pure software generated overlay.
- Possible to have more than one overlay card per PC
- Use the same overlay on multiple cameras, or a different overlay per camera
- Display any data sent from survey software

- User configurable text labels and titles
- Emulate an OceanTools or Taylor Lann hardware overlay device

1.2 Video Overlay

A video overlay is a display of text and/or graphics shown over the top of a video picture. For offshore survey a video overlay is used to identify the video image: where and when was it recorded, for what purpose and by what company. It will usually include the position and depth of the ROV, the name of the pipeline or structure being surveyed or inspected, and the details of both the client company and the survey or inspection company.

The video overlay can be applied "online" during the initial recording, or "offline" during video playback. If the overlay is recorded online then it forms an integral and fixed part of the video picture and cannot be changed in any way after the recording is made. If the overlay is applied offline then it is drawn on the display screen and is not a part of the recorded picture. This means that you can use the offline overlay to blank out and replace the online overlay.

In the VisualSoft Suite, the following options are available:

Online Overlay

An online overlay can be configured, created and recorded by the [VisualOverlay](#) ⁵ tools that are part of **VisualDVR**, or it can be configured and created by other software such as a stand-alone version of **VisualOverlay** (or other third-party applications and devices) before the pictures are recorded by **VisualDVR**.

The online overlay in **VisualDVR** and **VisualOverlay** can show data received as an ASCII data string on the **VisualDVR** or **VisualOverlay** PC itself, or data received by **VisualDataLogger** on a different, networked, PC.

Offline Overlay

An offline overlay can be configured and displayed by **VisualEdit**, **VisualEdit Eventing**, **VisualEdit Professional** or **VisualReview Professional**.

An offline overlay can be displayed by **VisualReview**, but it must have been previously configured using one of the three **VisualEdit** applications or **VisualReview Professional**.

The offline overlay can be used to display corrected navigation data, corrected KP or Station values, depth of pipeline burial, CP data or other values. It can be displayed on any of the video windows or on the graphical views of survey data.

1.3 VisualOverlay Quick Start Hardware Setup

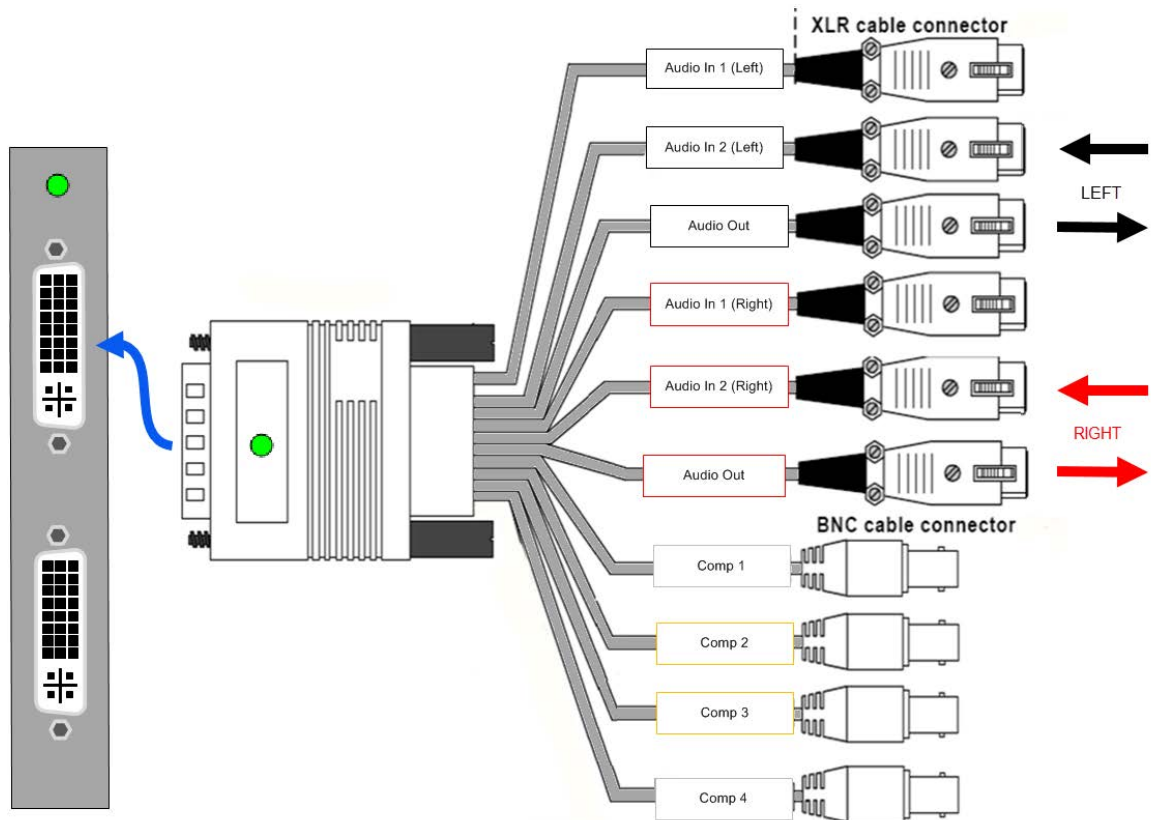
1.3.1 Quick Start: Hardware Setup for Videum Duo and Quattro with Breakout Cable

The Videum Duo and Quattro cards have in-built overlay capability. Video cables are connected to the card via a breakout box or breakout cable. A Vitec overlay card is required if the overlay has to be distributed around the vessel or if you want coloured text on the overlay.

NOTE: Composite video connections on the Videum breakout box or breakout cable use a single BNC composite connection each, attached to the Vid-1 to Vid-4 connectors as shown below.

Breakout Cable Connections

The connections are labelled Comp 1, Comp 2, Comp 3 and Comp 4.



1.3.2 Quick Start: Hardware Setup for Videum Duo and Quattro with Breakout Box

The Videum Duo and Quattro cards have in-built overlay capability. Video cables are connected to the card via a breakout box or breakout cable. A Vitec overlay card is required if the overlay has to be distributed around the vessel or if you want coloured text on the overlay.

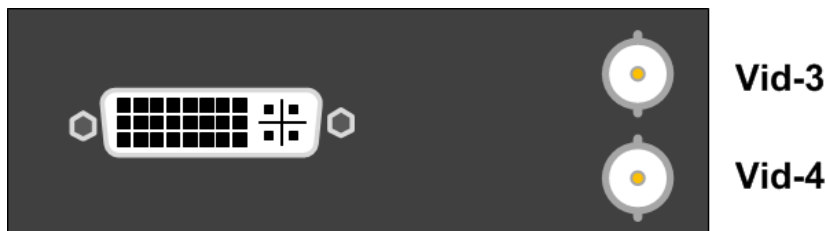
NOTE: Composite video connections on the Videum breakout box or breakout cable use a single BNC composite connection each, attached to the Vid-1 to Vid-4 connectors as shown below.

Breakout Box Connections

The Vid-1 and Vid-2 Connections are found on the front of the breakout box.



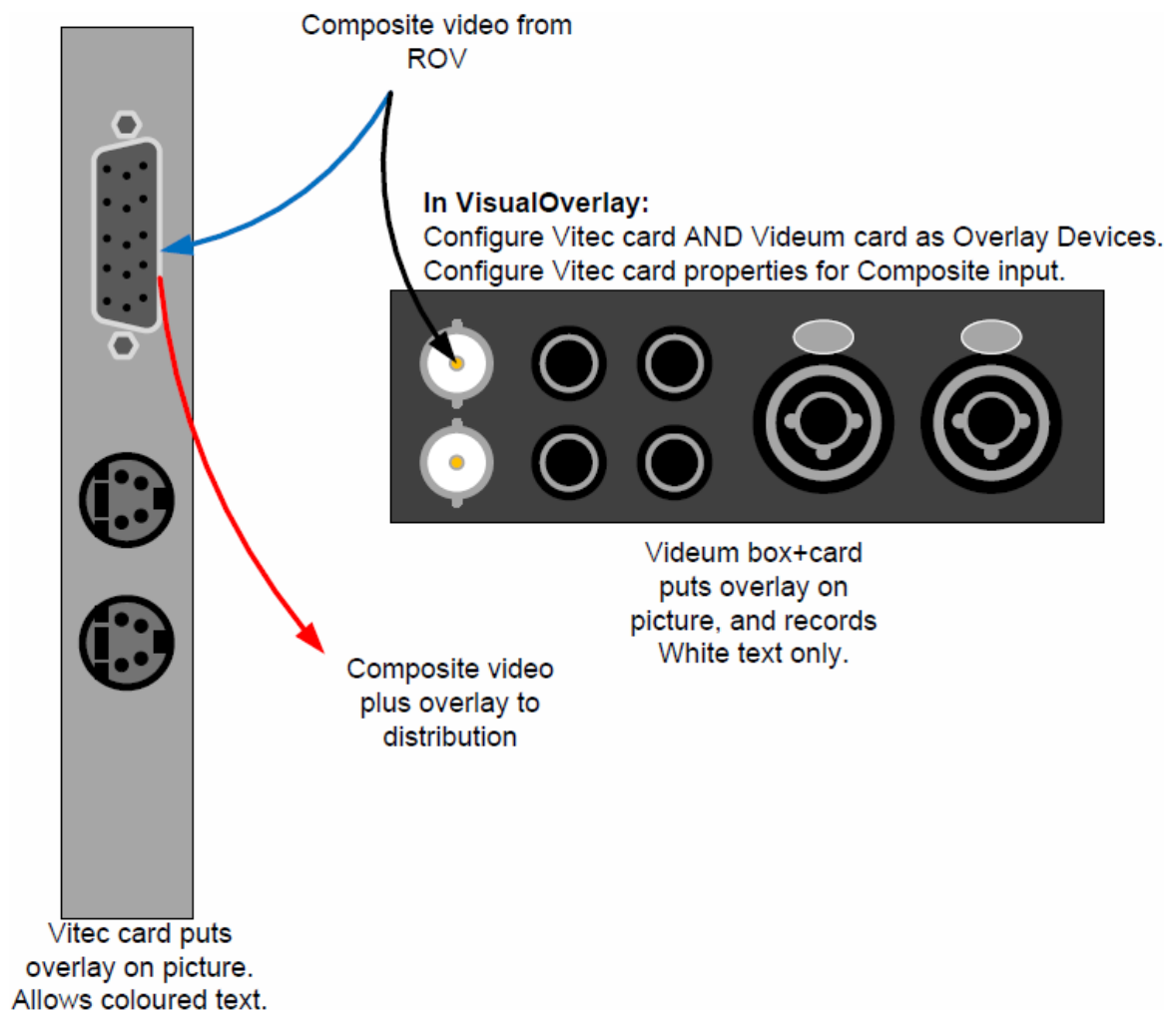
The Vid-3 and Vid-4 Connections are found on the rear of the breakout box.



Wiring Options: Vitec SD VM-OSD Breakout Cable

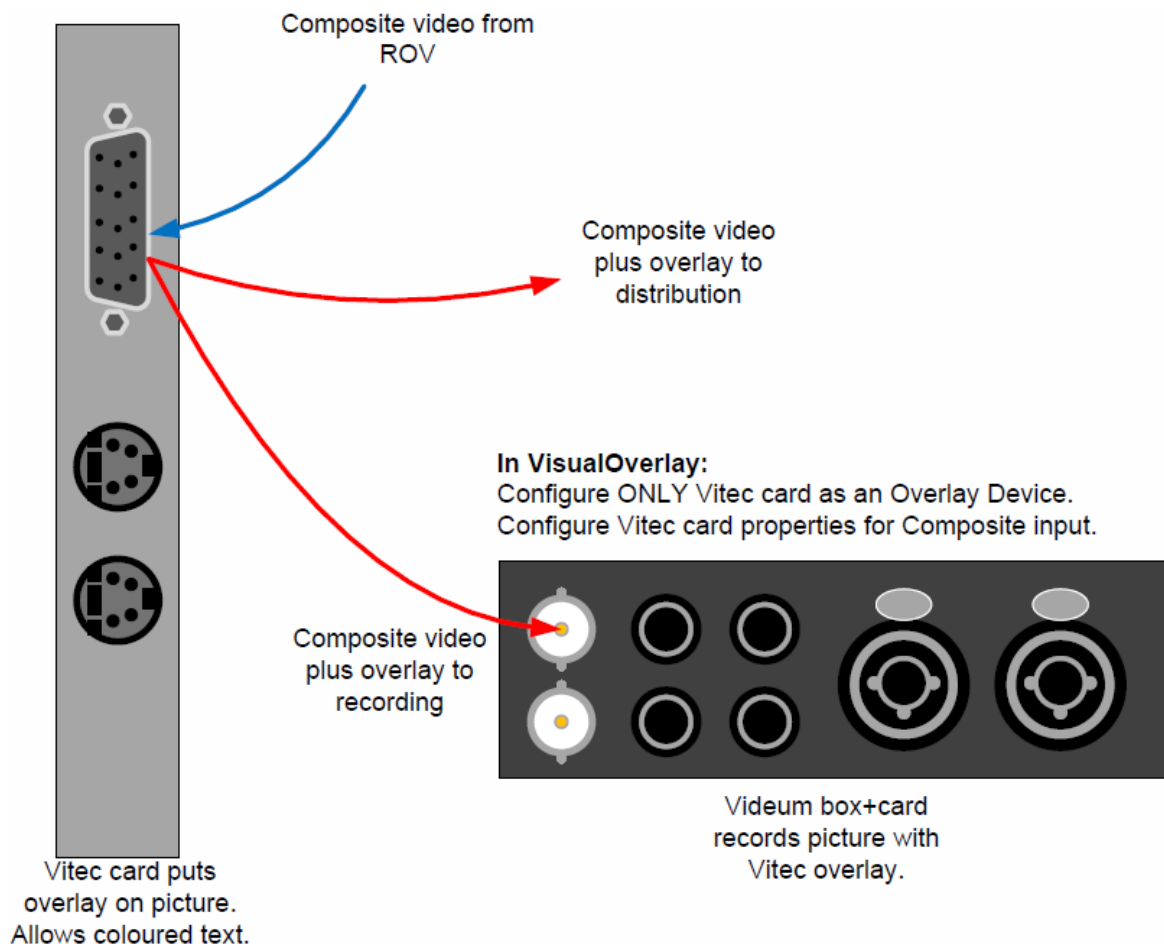
If you are using a Vitec VM-OSD SD overlay card it can be connected either in series or in parallel with a Winnov Videum Duo or Quattro card. The Videum card can place overlay onto a video image, but unlike the Vitec cards it does not allow the font or text colour to be changed.

If you wish to distribute live video with overlay around a ship you must use the Vitec card as this has a video output. The Videum card has no live output, its only output is to the recorded file.



If you require coloured text on the recorded picture then you must connect the Vitec VM-OSD SD Overlay card in series with the Videum card. In this case only the Vitec card

should be added as an Overlay Device in VisualOverlay. The Composite output from the VM-OSD card can be split and used for input to the Videum card and also for distribution of live video around a ship. This configuration is shown in the diagram below:



Vitec VM-OSD SD Overlay Card Breakout Cable

The Vitec VM-OSD SD Overlay card can be connected using a breakout cable connected to the 15-pin connection. The standard breakout cable shipped by VisualSoft has five BNC connectors which are colour coded as shown below.

(NOTE: The Breakout cable for other Vitec card models will be different. Please check the relevant pages for the card type that you are using. This page is for the VM-OSD only.)

Cable	Pin	Function
Red	1	Composite Video Out
Green	2	Not used
Blue	3	Composite Video In
Grey	13	S-Video Input No. 3 Luminance (Y) (Not recommended)
Black	14	S-Video Input No. 3 Chrominance (C) (Not recommended)



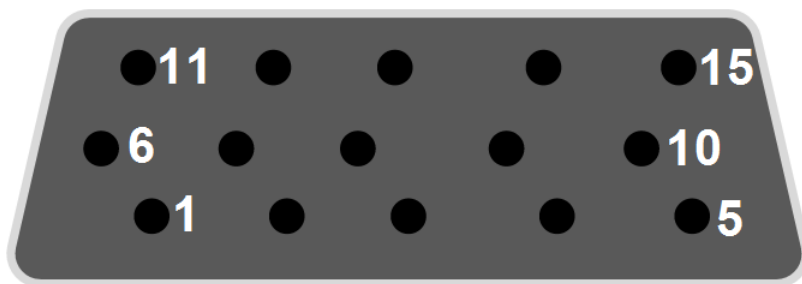
15-pin DSUB (VGA) to 5x BNC cable

DSUB Pin Connections

If you need to make your own breakout cable, the connections for the Vitec SD VM-OSD are:

Pin No.	Pin Name	Pin Description
1	COMP_OUT	Composite video output
2	AGND	Analogue ground
3	COMP_IN	Composite video input
4	AGND	Analogue ground
5	CHROMA4_IN	Chrominance of the fourth S-video input
6	AGND	Analogue ground
7	AGND	Analogue ground
8	AGND	Analogue ground
9	AGND	Analogue ground
10	AGND	Analogue ground
11	LUMA2_IN	Luminance of the second S-video input
12	CHROMA2_IN	Chrominance of the second S-video input
13	LUMA3_IN	Luminance of the third S-video input
14	CHROMA3_IN	Chrominance of the third S-video input
15	LUMA4_IN	Luminance of the fourth S-video input

(NOTE: The Breakout cable for other Vitec card models will be different. Please check the relevant pages for the card type that you are using. This page is for the VM-OSD only.)



Wiring Options: Vitec VM2-C7 & VM2-C8 SD Overlay Breakout Cable

If you are using a Vitec SD VM2-C7 or VM2-C8 SD overlay card it can be connected either in series or in parallel with a Videum Duo or Quattro card. Like the Vitec cards, the Videum can add overlay to a video image, but the Videum has a restriction of only allowing white text, and the font cannot be changed.

If you wish to distribute live video with overlay around a vessel, you must use the Vitec cards because these have a video output. The Videum card has no live output; its only output is to the recorded file.

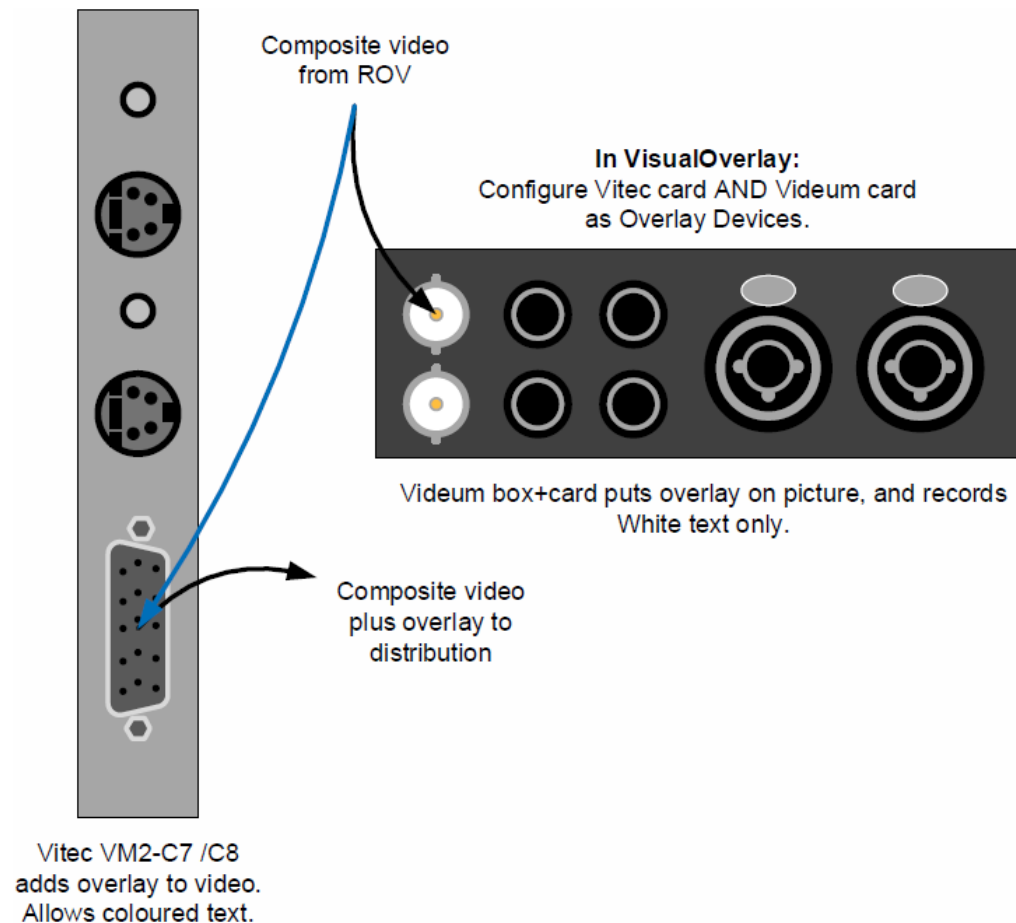
The diagram below shows a Vitec VM2-C7 or C8 card connected in parallel with a Videum card so that both cards put overlay onto the picture independently. This has an advantage of allowing two different outputs from the Vitec card, but a disadvantage of only allowing white text on the recorded overlay.

NOTE: When using the VM2-C7 or C8 cards you have a choice of three composite inputs, using the Red, Green or Blue input cables. We recommend the use of the **Blue** cable (Input No. 3).

If you are using a Vitec VM2-C7 or C8 SD overlay card it can be connected either in parallel or in series with a Winnov Videum Duo or Quattro card.

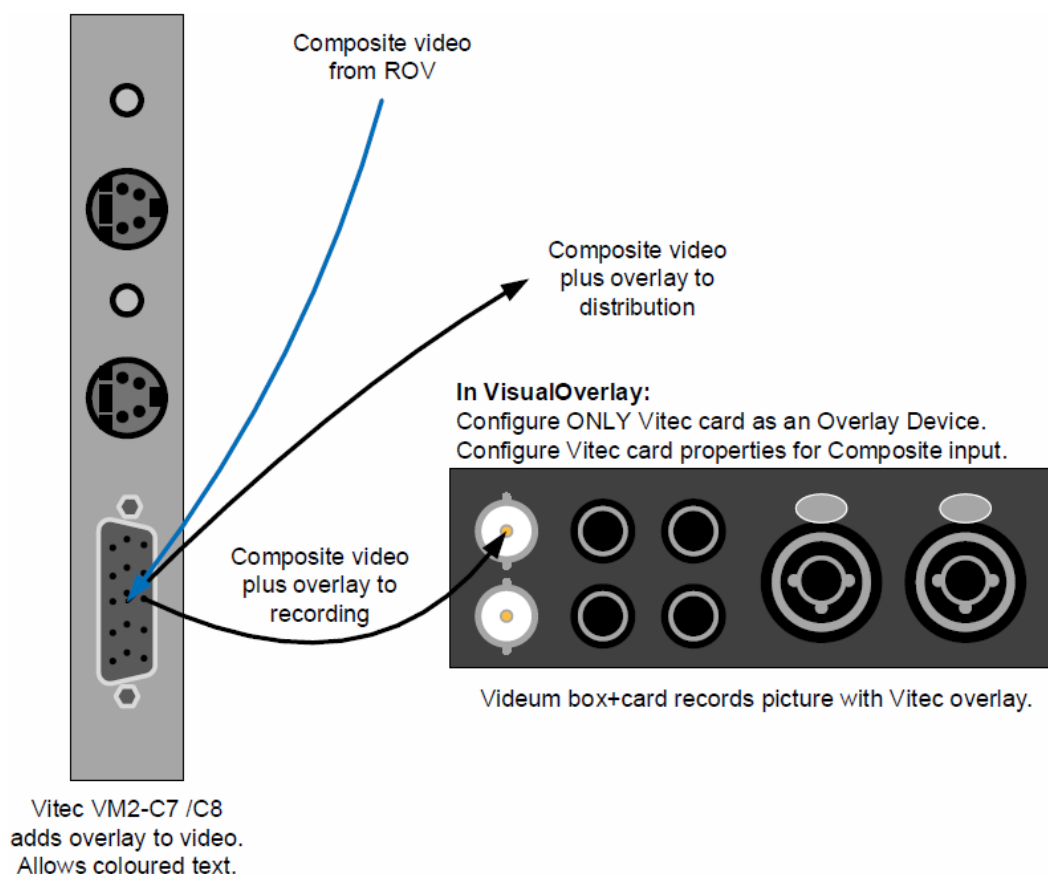
Vitec VM2-C7 / VM2-C8 and Videum Breakout box in Parallel

The Videum card can place overlay onto a video image, but unlike the Vitec cards it does not allow the font or text colour to be changed. When used in parallel both cards can add overlay to the image, but the overlay output from the Vitec VM2-C7 or VM2-C8 may include coloured text and multiple fonts whilst the overlay recorded by the Winnov Videum capture card will be white only, and only a single font (Courier).



Vitec VM2-C7 / VM2-C8 and Videum Breakout box in Series

If you require coloured text on the recorded picture then you must connect the Vitec VM2-C7 or C8 SD Overlay card in **series** with the Videum card. In this case only the Vitec card should be added as an Overlay Device in VisualOverlay. The Composite output from the VM2-C7 or C8 SD card can be split and used for input to the Videum card and also for distribution of live video around a ship. This configuration is shown in the diagram below:



Vitec SD (VM2-C7 & VM2-C8) Overlay Card Breakout Cable

The Vitec SD VM2-C7 or VM2-C8 cards can be connected using a breakout cable connected to the 15-pin connection. The standard breakout cable shipped by VisualSoft has five BNC connectors which are colour coded as shown below.

(NOTE: The Breakout cable for other Vitec card models will be different. Please check the relevant pages for the card type that you are using. This page is for the VM2-C7 or VM2-C8 only.)

Cable	Pin	Function
Red	1	Composite Video In No. 1 (Not recommended)
Green	2	Composite Video In No. 2 (Not recommended)
Blue	3	Composite Video In No. 3 (Recommended)
Grey	13	Not used (RGB Blue component)
Black	14	Composite Video Out



15-pin DSUB (VGA) to 5x BNC cable

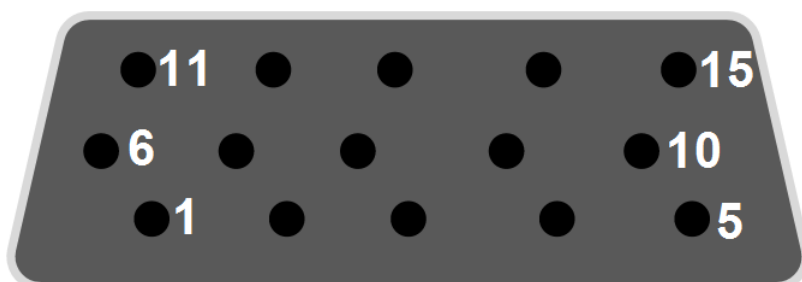
DSUB Pin Connections

If you need to make your own breakout cable, the connections for the Vitec SD VM2-C7 and C8 are:

Pin No.	Pin Description
---------	-----------------

1	Luminance of S-video 1 input OR Composite video 1 input
2	Chrominance of S-video 1 input OR Composite video 2 input
3	Luminance of S-video 2 input OR Composite video 3 input
4	Chrominance of S-video 2 input OR Composite video 4 input
5	Slow Switching (SCART)
6	Ground
7	Ground
8	Ground
9	Reserved
10	Reserved
11	RGB Red output
12	RGB Green output
13	RGB Blue output
14	Composite output
15	Fast Switching (SCART)

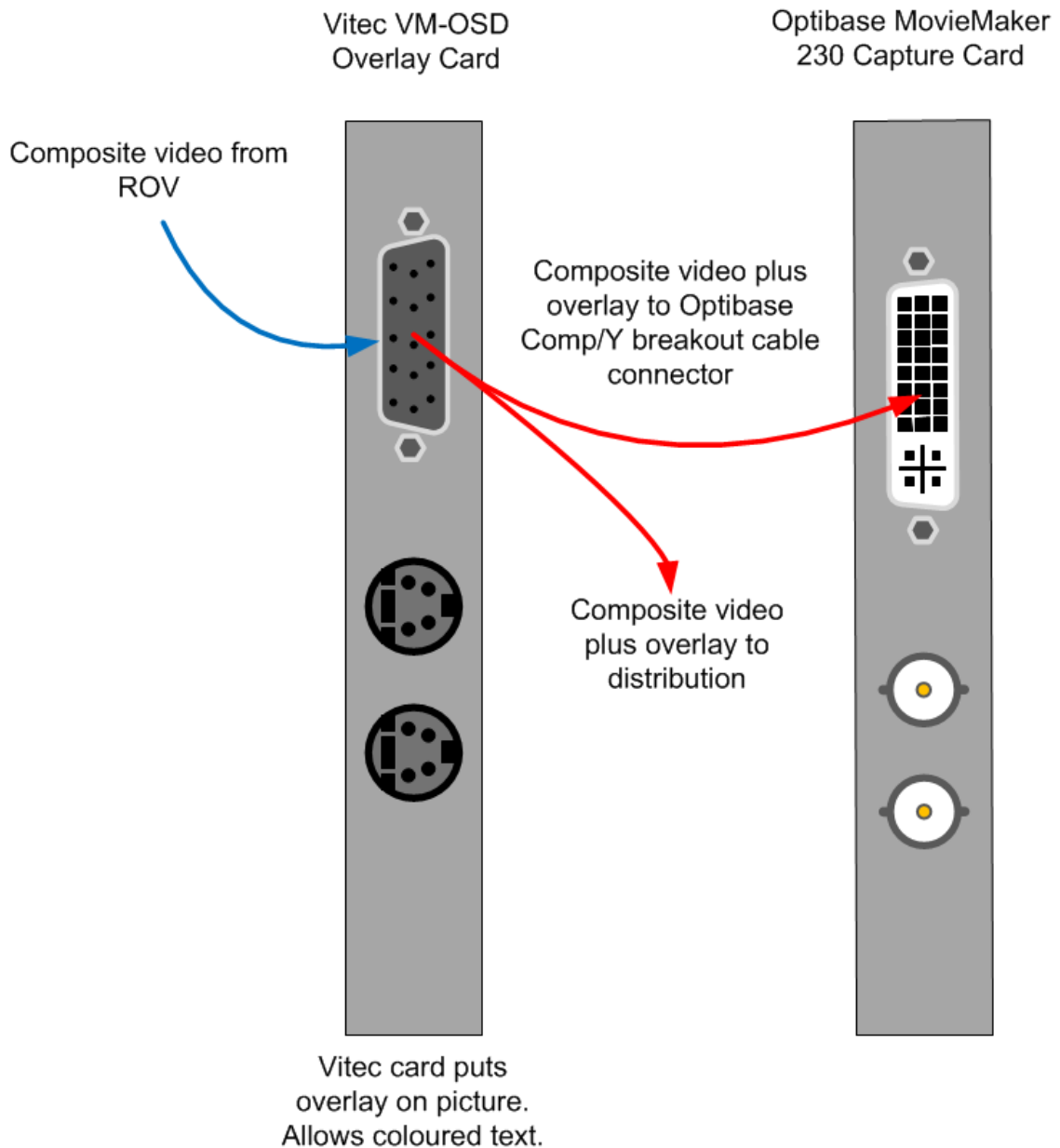
(NOTE: The Breakout cable for other Vitec card models will be different. Please check the relevant pages for the card type that you are using. This page is for the VM2-C7 & VM2-C8 only.)



1.3.3 Quick Start: Hardware Setup for Optibase MovieMaker 230

Using the Optibase MovieMaker 230 with the Vitec VM-OSD SD overlay

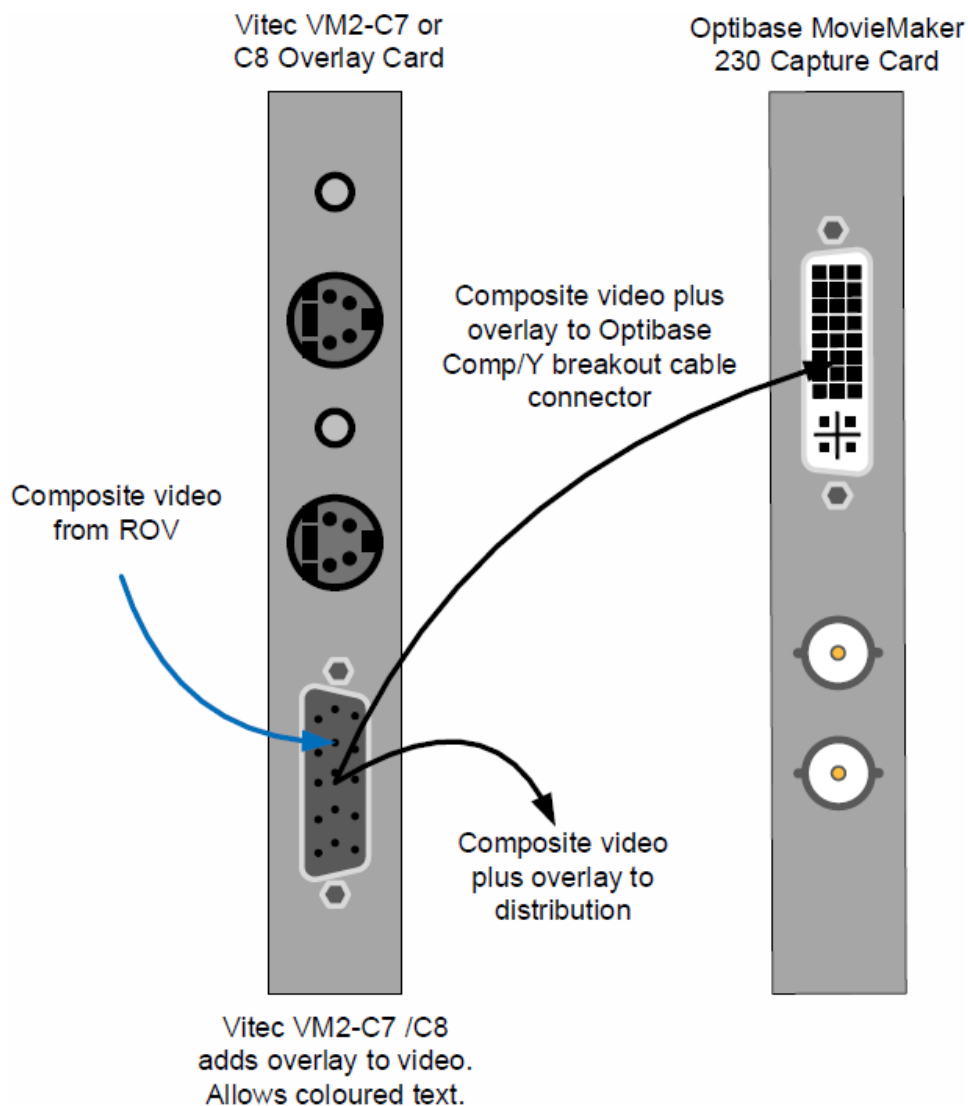
Connect the source video to the Blue input BNC connector of the VM-OSD Breakout cable and connect the Red BNC output of the VM-OSD breakout cable to the Comp/Y input connector of the Optibase cable.



Using the Optibase MovieMaker 230 with the Vitec SD VM2-C7 or VM2-C8

Connect the source video to the Blue input BNC connector of the VM2-C7 or C8 Breakout cable and connect the Black BNC output of the VM2-C7 or C8 breakout cable to the Comp/Y input connector of the Optibase cable.

NOTE: When using the VM2-C7 or C8 cards you have a choice of three composite inputs, using the Red, Green or Blue input cables. We recommend the use of the Blue cable (Input No. 3) for compatibility with the older Vitec VM-OSD card.



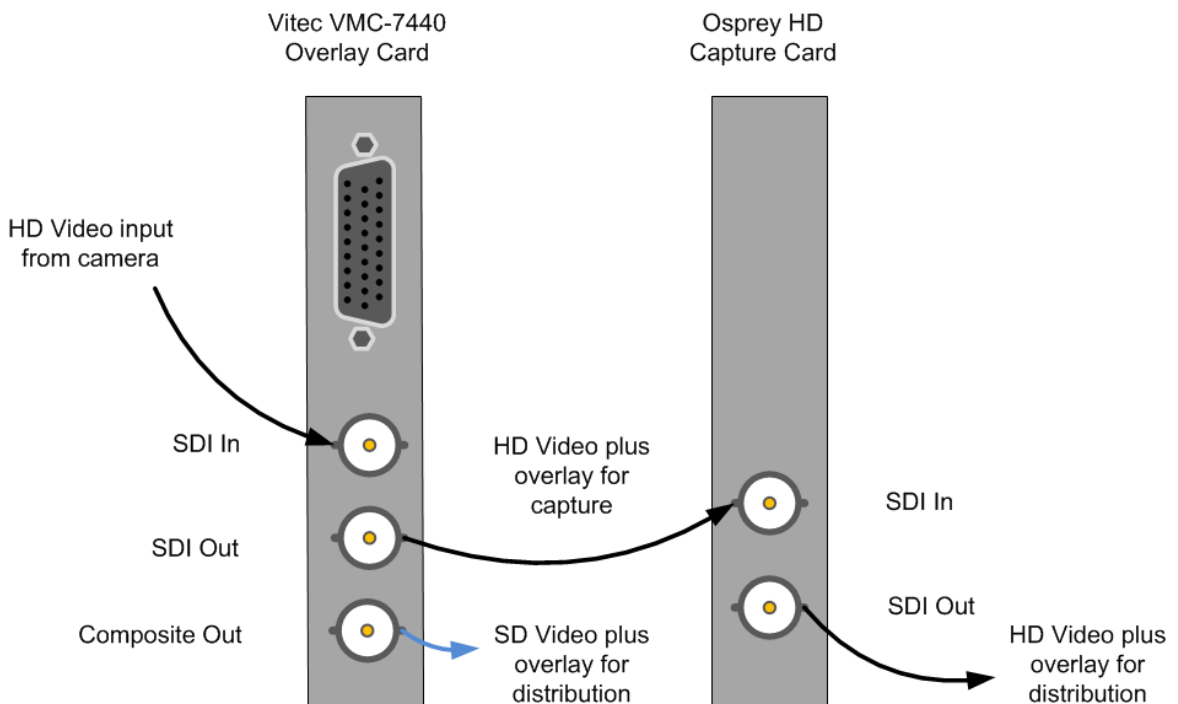
1.3.4 Quick Start: Hardware Setup for Osprey HD

If you are using an Osprey 700e, 815e or 825e HD card for video encoding, you can connect in series with (i.e. downstream of) a Vitec VMC-7440 overlay card.

The diagram below shows a Vitec VMC-7440 connected in series with an Osprey HD capture card, so that overlay is added to the recorded HD picture.

The Osprey card features an SDI video out connection that allows HD video plus overlay to be distributed around the vessel.

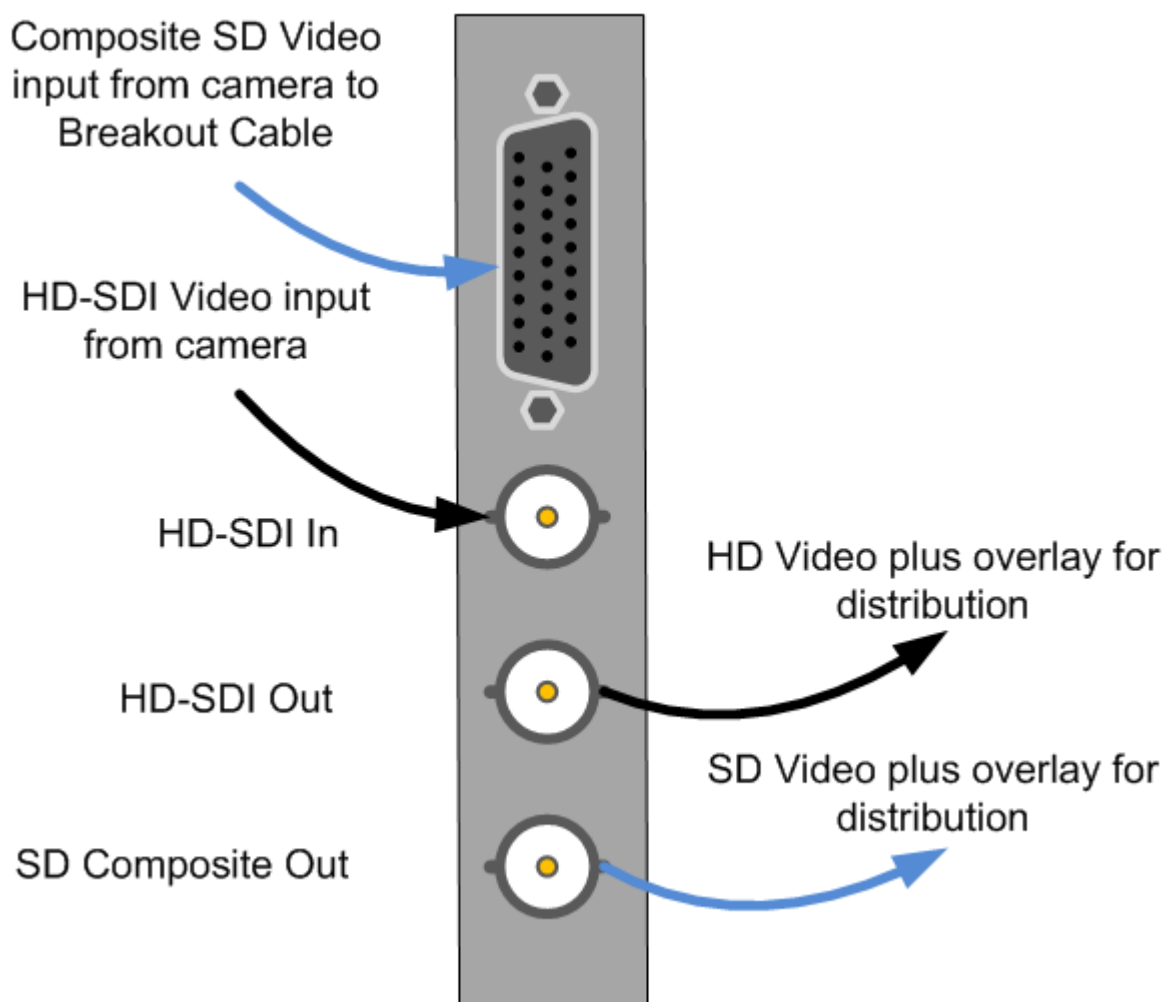
The Vitec VMC-7440 card also includes a Composite SD video out connection which allows a version of the HD video signal, down-scaled to SD to be distributed.



1.3.5 Quick Start: Hardware Setup for Vitec 7440 HD

If you are using a system with one or more Vitec 7440 HD cards you can use the cards to add overlay to HD or SD video images; no separate overlay cards are required.

With the configuration shown below the output of the card will be the combined picture and overlay. This combined image can be distributed as required.



1.3.6 Quick Start: Using a Separate VisualOverlay PC

If you are using a multi-channel VisualDVR with Optibase cards, you will have to use a different PC to house the required Vitec SD overlay cards and run a stand-alone version of VisualOverlay. Each Vitec SD overlay card in the VisualOverlay PC should be connected to the corresponding Optibase MovieMaker card using the wiring methods shown in the preceding sections.

In some cases you may also wish to use a separate, external overlay unit when using VisualDVR with a Winnov Videum capture card. This is less likely than with the Optibase cards because a four channel Winnov card requires only one slot in the PC, whilst four channels with Optibase cards requires four slots for the four capture cards leaving little or no space for any overlay cards.

1.4 VisualOverlay Quick Start Software Setup

1.4.1 Quick Start: Opening the Overlay Configuration

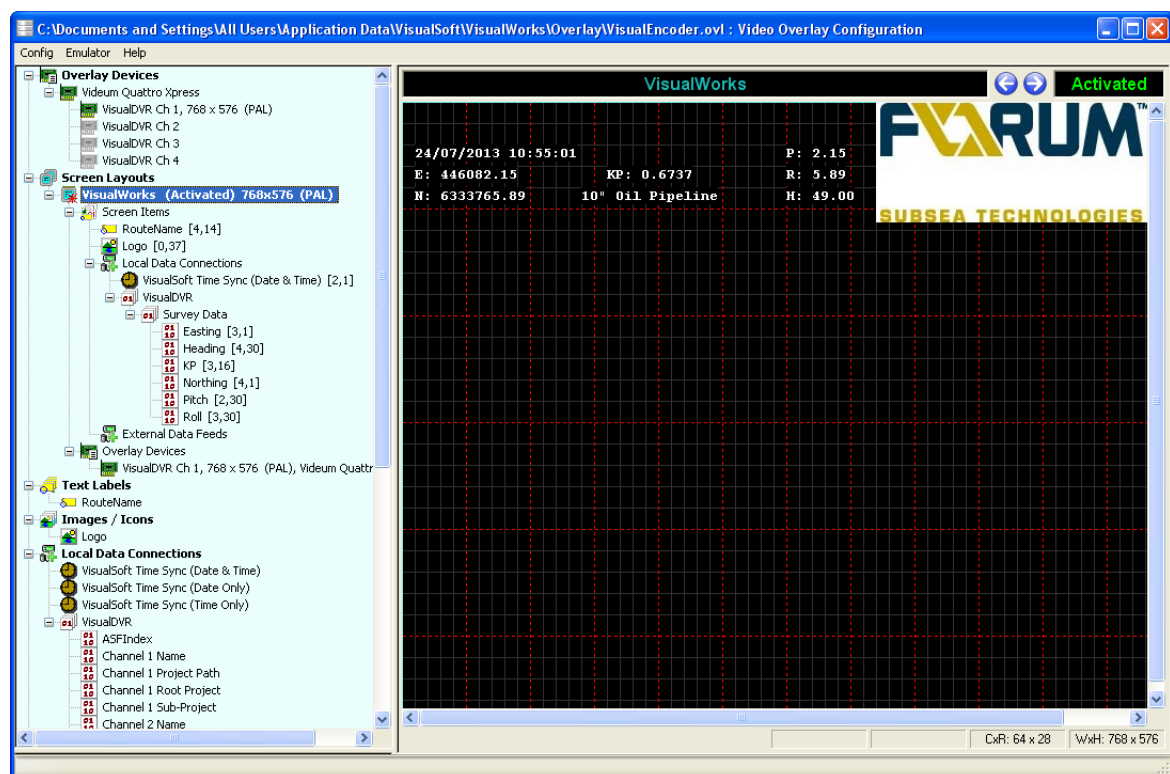
In VisualDVR, you can open the overlay setup by pressing **F6** on the keyboard, or using the menus by going to System Setup and Admin > Advanced > Configure Video Overlay.

If VisualOverlay is being used on a standalone unit, as described in "[Quick Start: Using a Separate VisualOverlay PC](#)"²²", then you need to run the VisualOverlay software application via Start > Programs > VisualSoft Suite > Tools > VisualOverlay.

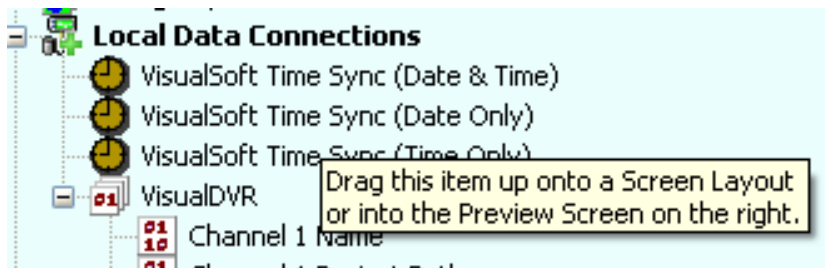
1.4.2 Quick Start: Overlay Configuration Screen

The left hand pane of the window shows a data tree with the following information:

- A list of the available Overlay Devices. For live video overlay you should see a device called, Vitec VM-****, Videum Duo, Videum Quattro or Rogue Stream
- A list of available Screen Layouts. A list of different layouts may be pre-configured so that you can simply activate the one you want to be displayed
- A list of available Items that can be selected for display on any Screen Layout. These items include any of the data values available to the system, i.e. any survey sensors attached to the VisualSoft Suite
- You can also setup Text Labels/Titles and import pictures/logos



1.4.3 Quick Start: Drag and Drop



As you move the cursor in the list on the left of the Overlay window, you will see it change from an arrow to a hand when it is over something that you can drag. A pop-up “tool-tip” will explain where you can drag the item

To add an Overlay Device to a Screen Layout, click and drag, then let go over the desired Screen Layout

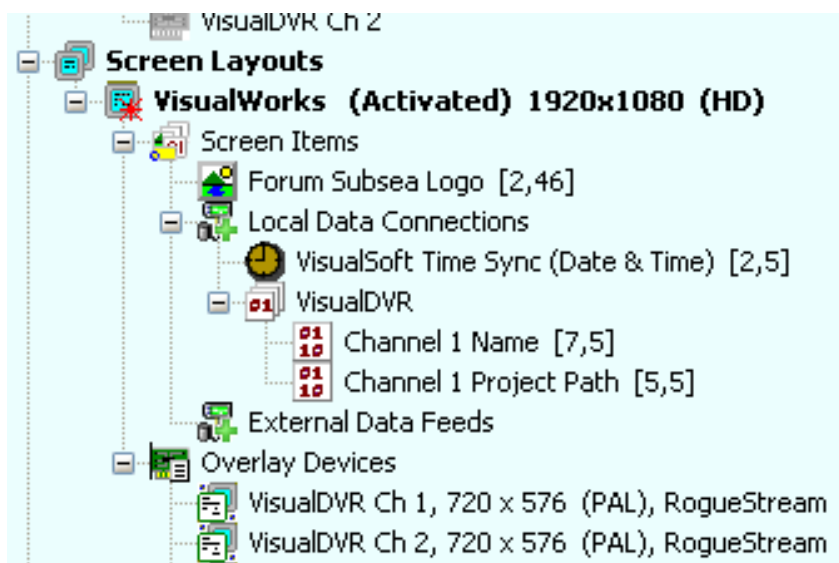
To add multiple Overlay Devices to a Screen Layout click higher in the tree hierarchy and drag all channels of a multi-channel card, or even all available devices

To add data, text labels or pictures drag them upwards onto a screen layout or across into the preview window

1.4.4 Quick Start: Configure an Overlay

The VisualWorks screen layout is created automatically. To create a new Screen Layout, right-click on “Screen Layouts” and select “New” from the pop-up menu. Give the new layout a name, e.g. VisualSoft.

Figure : VisualOverlay Data Tree



Use drag-and-drop to select and position the Data, Text Labels or Titles, and Logo Pictures that you want to be displayed.

Format the data items by double-clicking on them.

Use drag-and-drop to add one or more Overlay Devices to the Screen Layout.

Activate your Screen Layout to appear on the video overlay – right click on your Screen Layout and select Activate Screen. You can also do this by double-clicking in the top right corner where the word Activated or De-Activated is displayed. You should now see the overlay in the preview screen, and also on your VisualDVR screen.

1.5 Overlay Devices

An Overlay Device is a hardware device to which a configured overlay may be sent, or a software renderer which adds overlay to the picture before recording.

1.5.1 Hardware Overlay Devices

Vitec VM-OSD SD Overlay Card

The Vitec VM-OSD SD overlay card takes in a video signal, adds the overlay text and images to it, and outputs a new, combined video signal. This options allows both the generation of an overlay for the recorded digital video and an output to an external monitor display.



Vitec VM2-C7 SD Overlay Card

The Vitec VM2-C7 SD overlay card takes in a video signal, adds the overlay text and images to it, and outputs a new, combined video signal. This options allows both the generation of an overlay for the recorded digital video and an output to an external monitor display.



For wiring and connections, see [Vitec SD \(VM2-C7 & VM2-C8\) Overlay Card Breakout Cable](#)¹⁷.

Vitec VM2-C8 SD Overlay Card

The Vitec VM2-C8 SD overlay card takes in a video signal, adds the overlay text and images to it, and outputs a new, combined video signal. This options allows both the generation of an overlay for the recorded digital video and an output to an external monitor display.



For wiring and connections, see [Vitec SD \(VM2-C7 & VM2-C8\) Overlay Card Breakout Cable](#)¹⁷.

Vitec VMC-7440 HD Overlay Card

The Vitec VMC-7440 HD overlay card takes in an HD or SD video signal, adds text and images to it, and outputs a new, combined video signal. This options allows both the generation of an overlay for the recorded digital video and an output to an external monitor display.



Videum Duo SD Encoder/Overlay Card

There will be two overlay channels to select. The Videum Duo card combines both overlay and video encoding in a single card, and has fewer configuration options. These cards only generate an overlay for the recorded digital video – there is no live external monitor output.



Videum Quattro SD Encoder/Overlay Card

There will be four overlay channels to select. The Videum Quattro card combines both overlay and video encoding in a single card, and has fewer configuration options. These cards only generate an overlay for the recorded digital video – there is no live external monitor output.



1.5.2 Software Overlay Devices

RogueStream

The RogueStream overlay has options for colour and font selection, but only generates an overlay for the recorded digital video; there is no external distributable output.

RogueStream software overlay can be used with the Osprey HD video encoder card.

1.6 Screen Layouts

A Screen Layout is a configured arrangement of text and image items forming an overlay. Multiple Screen Layouts can be configured and saved, and these may then be **Activated** or **De-Activated** as required.

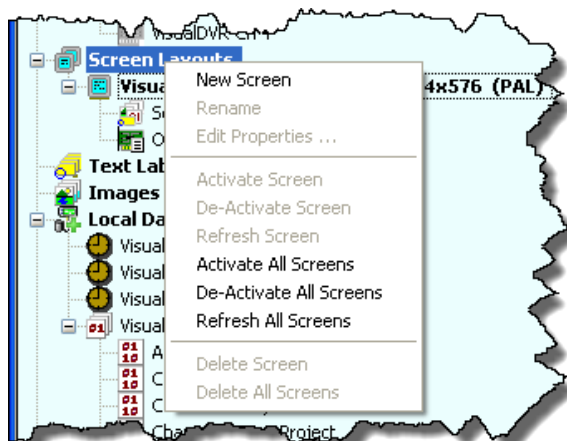
A Screen Layout is made up of one or more Screen Items, and has one or more Overlay Device associated with it.

If there are multiple Screen Layouts, you can change between them by clicking on the layout name in the Screen Layouts section on the left hand side of the overlay panel, or you can click the left/right arrows (← →) at the top of the screen to step through the screens in order.

1.6.1 Creating a Screen Layout

The Screen Layouts list shows all currently configured overlay screen layouts. To create a new Layout right click on Screen Layouts and select New, Screen and then type in a name for it.

It is possible to setup a number of different overlay pages, for example for different clients or jobs. You can then select any of the layouts for output on the screen. Depending on the items being displayed within the Screen Layout, it can be used as either a Header page or a constantly updating overlay page for display during survey operations.



1.7 Screen Items

Screen Items are Data Fields, Labels and Pictures that have been associated with a particular Screen Layout. Each Screen Item has a configured position on the screen and has font, colour, and formatting properties.

1.8 Items

An Item may be a Data Field, a Label, or a Picture. Any available Item may be added to any available Screen Layout. Items may be given user definable names, with the exception of Data Fields, which are named automatically with the names of the serial data string columns.

1.8.1 Data

Data Fields are created from a serial data string received on the local PC or a networked PC by VisualDVR. Such a data string usually comes from the online navigation of inspection software. Each field in the data string, such as time, date, Easting, Northing, or KP appears as a separate Data Field. A data field may be configured with a position, a font, a colour and a format.

NOTE: Font type and colour selection are currently not supported by the Videum Duo and Quattro cards.

1.8.2 Text Labels

Labels are user definable text items, with a position, font, colour and a format. Users may type any text that they require into a Label, and so these may be used to place text onscreen that is not otherwise available in the serial data string. This might be a project name or route name for example.

NOTE: Font type and colour selection are currently not supported by the Videum Duo and Quattro cards.

Creating New Text Labels

To create a new text label, Right click on Text Labels in the data tree, and select New.

This will create a text label with a default name such as NewLabel1. This default name will be automatically highlighted so that you can easily type over it to change the name. For example you might create a text label called “Client” or “Pipeline”.

You can use the properties of the text label to set the client name for each project without having to re-create the whole text label and reconfigure your layout. After assigning the name, right-click on the new item and select Edit Properties from the pop-up menu. Use the Text Label tab to enter the text you want to see on screen, for example in your text label called “Client” set the label to be “Shell” or “BP”.

A new text label is set to use the font and colour properties of the Screen Layout that you attach them to. If you want the text to appear with a colour or font which is different from the Screen Layout's settings you can deselect the options to “Use Screen's Font”, or “Use Screen's Colour” and then change the individual settings as required.

1.8.3 Images and Icons

A picture may be any of the following file types: BMP, TGA, JPEG, or an Icon file.

If required, a picture may be set to partial transparency so that the video can be seen through it, with the picture appearing rather like a “watermark” in the video.

Creating New Images or icons

Right click on Images/Icons in the data tree, and select New.

Rename the new image and then open the properties by right-clicking. On the File tab use the button to the right of the file name to browse and select your image file: VisualOverlay supports BMP, TGA, JPEG, and Icon files.

It is not currently possible to re-size images within VisualOverlay; we hope to change this in the future. For now, please re-size your image before adding it to your overlay.

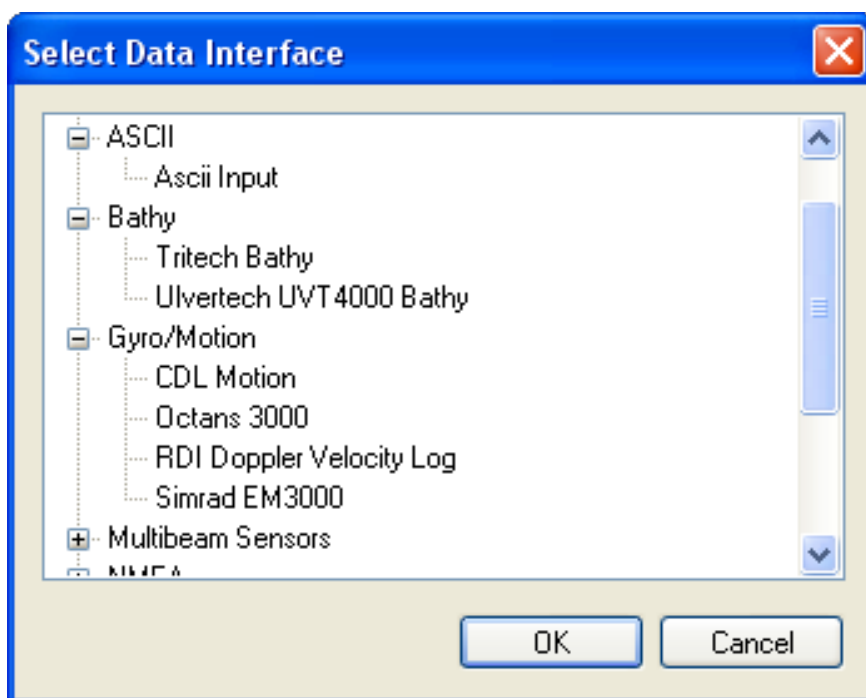
1.9 Interfacing Extra Equipment to VisualOverlay

VisualOverlay automatically picks up the Survey data string interfaced to VisualDVR itself, but you can also add extra interfaces directly to VisualOverlay.

To add an interface, right click on Local Data Connections in the tree view on the left of the screen and select Add Interface.



You will see a list of available data types. Select your equipment and configure either a serial port or network port as appropriate.



1.9.1 Sensor Interfaces

For details of how to configure specific sensors, please refer to the VisualData Logger Software Manual which can be downloaded from our [website](#) by following the links to Support and then Downloads. Both VisualOverlay and VisualData Logger use the same configuration options – the only difference is that VisualData Logger saves the data to files that may be post-processed, whilst VisualOverlay embeds the data display in the video without logging it to separate data files.

If your equipment is not listed, you can probably use the "ASCII Input" option to setup a customised decode. See below for more details.

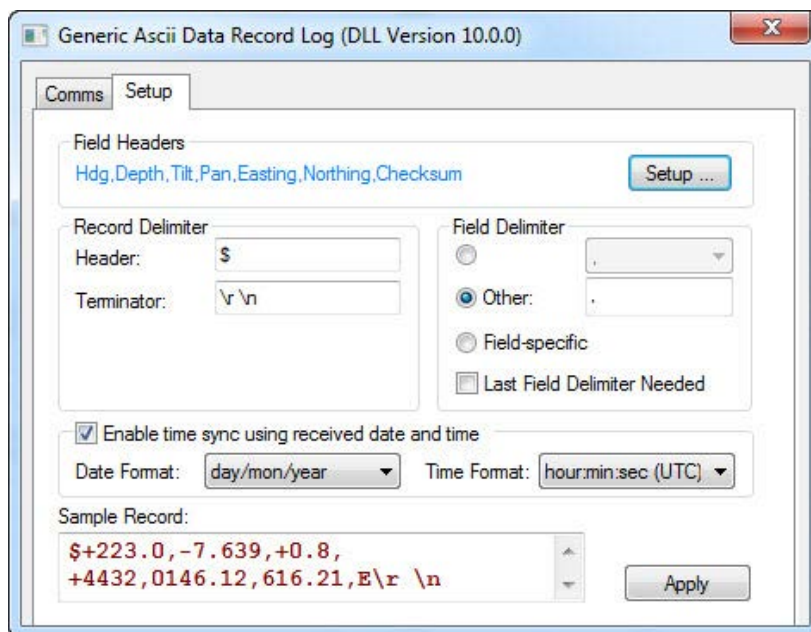
1.9.2 ASCII Input

Setup the Communication Parameters for the Serial device.

First enter the Header character (if there is one) and End of Line terminator – usually \r \n (CR/LF).

Next, enter the Field Delimiter (what separates each data value) either by selecting from the drop down menu, or by selecting the Other radio button and typing in what the delimiter is. If you have a more complex string, then you can specify separate field delimiters – select Field specific and then define the delimiter individually for each field: see next page for examples.

If you need the string to drive synchronisation of the VisualSoft system then check the 'Enable time sync using received date and time' box, and define the Date Format and Time Format of the incoming ASCII string.



Next, build the list of incoming fields – an example is shown below.

If the list is blank, i.e. you are creating a completely new input decode, then go to the next step.

To edit an existing setup you can Add new fields, Remove fields, edit/Setup fields, and Move fields into the correct order.

Name	Type	Format
Hdg	double	+nnn...nn.n
Depth	double	+nnn...nn.nnn
Tilt	double	+nnn...nn.n
Pan	double	+nnn...nn
Easting	double	nnn...nn.nn
Northing	double	nnn...nn.nn
Checksum	text	aaa...aa

Count = 7

Click Add to add another field

Type in a Name for the field

Select the Data Type:

- Text – If the data value is a text value
- Integer – If the data is only an Integer
- Double – For numeric values with decimals
- Date – For Date only i.e. 12/01/2006
- Time – For Time only i.e. hh:mm:ss.s
- Date-Time – Field including Date and Time

You can also specify the Width and No. of decimals if these are always fixed – the format of your chosen configuration is displayed in the Format box.

Check the box if you want the Sign of the value to always be displayed i.e. +/-

Setup Field

Field Name: Preview:

Data Type:

Width = Decimal =

☒ Show Sign Always

Format:

Delimiters:

☒ Same Delimiters for all Fields

☐ Field-Specific:

☐ Prefix: ☐ Optional

☐ Suffix: ☐ Optional

Data String Examples

Simple Case – No Field Header

- Terminator = `\r\n`(CR/LF)
- Delimiter = , (comma)

Fields are:-

- Date Type = Date 01/01/2006
- Time Type = Time 12:33:43.2
- Easting Type = Decimal 578050.1
- Northing Type = Decimal 6378377.9
- Hdg Type = Decimal 180.0

Example below:

Date, Time, Easting, Northing, Hdg CR/LF

01/01/2006,12:33:43.2,578050.1,6378377.9,180.0CR/LF

Complex Case:

In this instance the strings includes individual defined headers for each field so we have to build a decoder to remove the unwanted characters and leave just the useful data fields.

- Field Header = \$CH0,
- Terminator = \r\n (CR/LF)
- Delimiter = Field Specific
- 1st Delimiter = ,CH1,
- 2nd Delimiter = ,CH2,
- 3rd Delimiter = ,CH3, and then use Field Suffix = ,N*SHDBUNPYBWRICNFHX to get rid of the checksum data at the end of the string.

Fields are:

- Channel 0 Type= Decimal 07.0
- Channel 1 Type= Decimal 819.5
- Channel 2 Type=Decimal 40.2
- Channel 3 Type=Decimal 958.9

Example below:

```
$CH0,07.0,CH1,819.5,CH2,40.2,CH3,958.9,N*SHDBUNPYBWRICNFHX\r\n
```

Enable Plotting to Show the Graphic Display

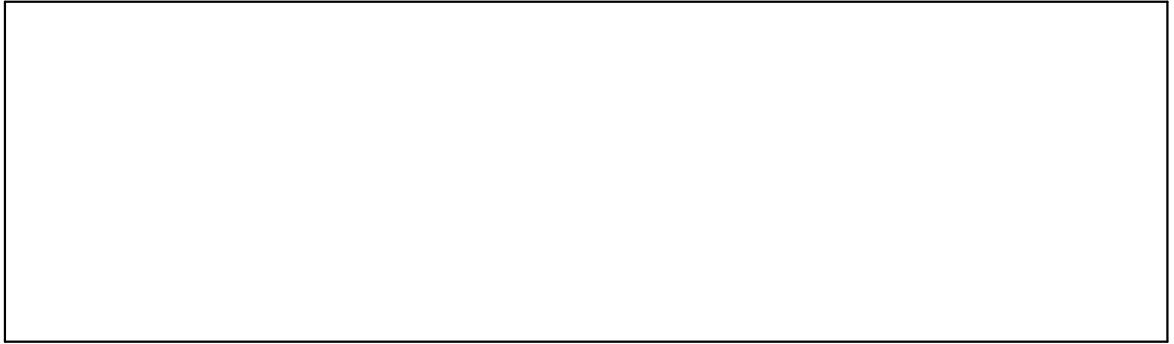
Select what Data Values to Plot on the Display Graph from the Drop Down boxes which will list the available data fields.

Check the Plot Y VisualSoft Ltd Record Time box if you want to plot the data against Time

Enable the Trail Line if you want plot a trail line behind the current data and configure the colour and line width

History allows you to set the History period for the data plot

Enable Tracker to a display a tracker box.

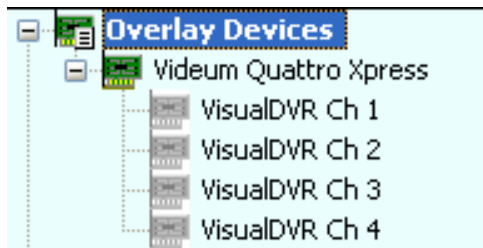


1.10 Working with a Multi-Channel VisualDVR

When using a multi-channel VisualDVR with either a Winnov Videum Duo or Quattro, or Vitec VMC-7440 card, you are able to create multiple different overlays to place different text on different channels. In this way, each camera may be labelled individually.

1.10.1 Configure Multiple Overlay Devices

All available overlay devices will be displayed in the Overlay Devices section of the screen. For example, when using a Videum Quattro or Videum Duo card, you should see either four or two overlay devices respectively as shown below:



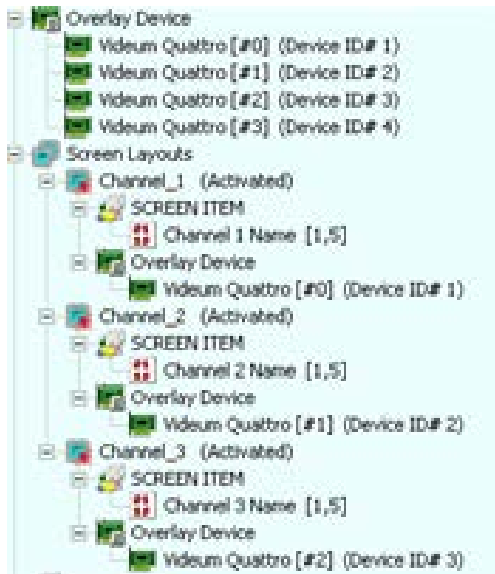
To add both channels of a Duo card, or all four channels of a Quattro card to the same screen layout, drag the “Videum Duo” or “Videum Quattro” to the layout.

To add only one channel, drag the individual numbered channel.

Once an overlay device has been added to a screen, then it will no longer appear greyed out.

1.10.2 Configure Multiple Screen Layouts

Each video channel can be configured with its own “Screen Layout” allowing different overlay text to be placed on different video channels. In this way, each video channel can, for example, be labelled with the appropriate camera name. It is recommended that you create Screen Layouts to match the names of the video channels.



1.11 Setting Default Screen Properties

Each **VisualOverlay** Screen may have its own default properties for font settings and text behaviour. To open the properties settings, right-click on the name of the Screen Layout in the data tree, and select Edit Properties from the pop-up menu. This will open a dialog box with five tabs; Name, Font, Colour, Text Margin and Update Timer. Select each tab and make the required changes, then click the OK button.

1.11.1 Screen Name

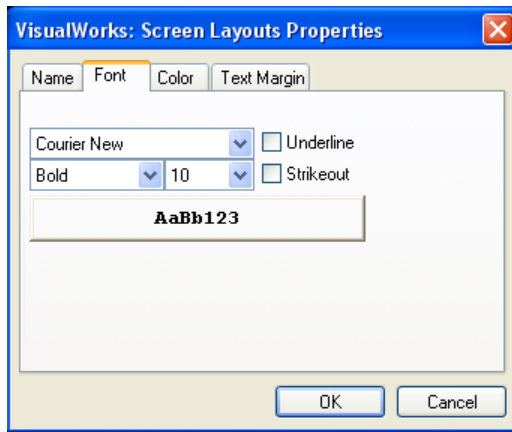
The screen name may be changed on the Name tab of the properties window. The name may be used to differentiate between different cameras, or different purposes of overlay.

1.11.2 Text Font and Colour

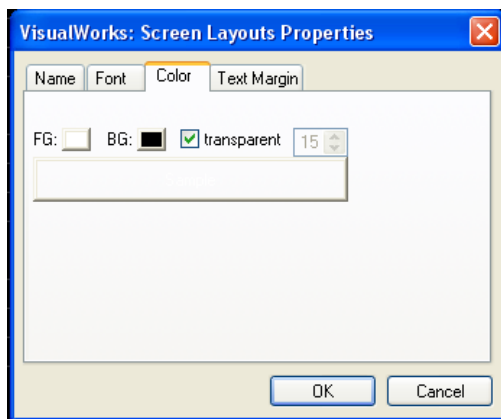
You can set a default font and text colour for each Screen Layout, so that as data items are added to the screen they all appear with a consistent look.

NOTE: Only the Vitec cards support selection of font type and colour. The Videum cards have a predefined font for which only the size may be changed.

Screen Layout Default Font



Screen Layout Default Colour



Use the “transparent” option to make the background colour transparent so that your text displays directly over the video picture as shown in Error! Reference source not found..

Fully Transparent Text Background



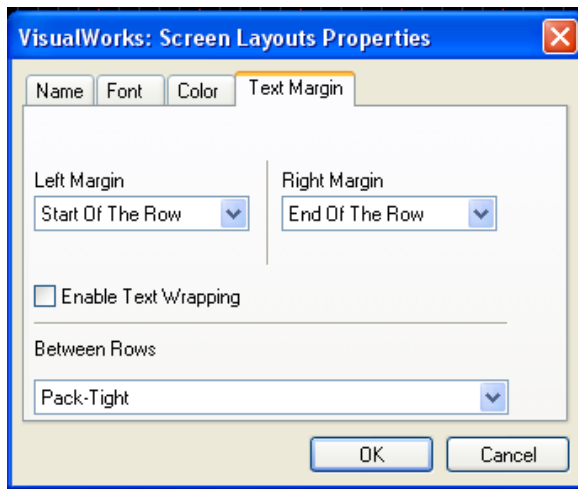
If you disable the “transparent” option you can specify how much the video picture should show through the background colour of the text. If you set the transparency to 7, the background colour will be semi-transparent, and will appear like the image on the left below. If you set a value of 15 then the background will not be transparent and your text will appear with a solid background colour as shown on the right.

Text Background Transparency



1.11.3 Default Text Layout Options

The alignment and wrapping of text is configured on the “Text Margin” tab of the properties dialog window.



The Left margin may either be the edge of the screen, or a specified column number further to the right, thereby creating a clear margin down the left edge of the screen.

The Right Margin may be either the end of a text row, a fixed width (number of columns) or a specified column number.

Text Wrapping is off by default but can be enabled if required. If wrapping is not enabled, text will be cut off when it exceeds the limits of the Right Margin.

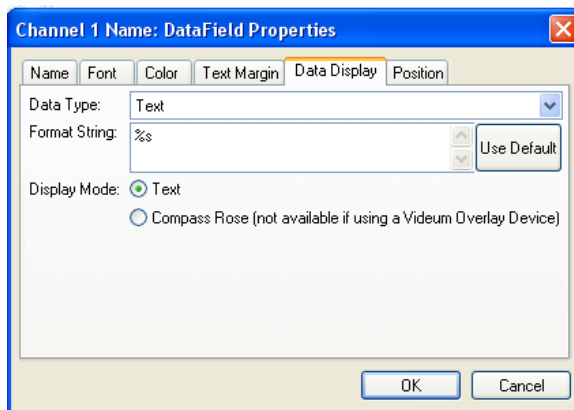
Text rows may either be each snapped to the closest screen row on the displayed grid, or can be “Packed Tight” ignoring the rows of the grid.

1.11.4 Default Screen Update Options

The default update rate of 200 milliseconds can be changed using the “Update Timer” tab of the Screen Layout Properties.

1.12 Formatting Data Fields

Data Fields can be formatted to display a prefix and/or suffix, and can be set to a fixed number of decimals. To format a Data Field, right-click on it and select Edit Properties from the pop-up menu.



1.12.1 Text Formatting

Format String	Description
%s	Outputs a text field and the width of the field will be the number of characters in the field

1.12.2 Time and Date Formatting

Examples

Raw data	Format options	Displayed data
(Date & Time)	Data Type: DateTime(Local) "%d %m %y"	23/01/11
(Date & Time)	Data Type: DateTime(Local) "%d %m %Y"	23/01/2011
(Date & Time)	Data Type: DateTime(Local) "%A %d %b %Y"	Sunday 23 Jan 2011
(Date & Time)	Data Type: DateTime(Local) "%H %M %S"	19:02:05
(Date & Time)	Data Type: DateTime(Local) "%l:%M:%S %p"	07:02:05 PM
(Date & Time)	Data Type: DateTime(Local) "%A %d %b %Y %l:%M:%S %p"	Sunday 23 Jan 2011 07:02:05 PM

Available Control Codes

Format String	Description
%a	Abbreviated weekday name
%A	Full weekday name
%b	Abbreviated month name
%B	Full month name
%c	Date and time representation appropriate for locale
%d	Day of month as decimal number (01 – 31)
%H	Hour in 24-hour format (00 – 23)
%I	Hour in 12-hour format (01 – 12)
%j	Day of year as decimal number (001 – 366)
%m	Month as decimal number (01 – 12)
%M	Minute as decimal number (00 – 59)
%p	Current locale's A.M./P.M. indicator for 12-hour clock
%S	Second as decimal number (00 – 59)
%U	Week of year as decimal number, with Sunday as first day of week (00 – 53)
%w	Weekday as decimal number (0 – 6; Sunday is 0)
%W	Week of year as decimal number, with Monday as first day of week (00 – 53)
%x	Date representation for current locale
%X	Time representation for current locale
%y	Year without century, as decimal number (00 – 99)
%Y	Year with century, as decimal number

Format String	Description
%a	Abbreviated weekday name
%A	Full weekday name
%b	Abbreviated month name
%B	Full month name
%c	Date and time representation appropriate for locale
%d	Day of month as decimal number (01 – 31)
%H	Hour in 24-hour format (00 – 23)
%I	Hour in 12-hour format (01 – 12)
%j	Day of year as decimal number (001 – 366)
%m	Month as decimal number (01 – 12)
%M	Minute as decimal number (00 – 59)
%p	Current locale's A.M./P.M. indicator for 12-hour clock
%S	Second as decimal number (00 – 59)
%U	Week of year as decimal number, with Sunday as first day of week (00 – 53)
%w	Weekday as decimal number (0 – 6; Sunday is 0)
%W	Week of year as decimal number, with Monday as first day of week (00 – 53)
%x	Date representation for current locale
%X	Time representation for current locale
%y	Year without century, as decimal number (00 – 99)
%Y	Year with century, as decimal number
	no characters if time zone is unknown

1.12.3 Number Formatting

Number Formatting Examples

Raw data string	Format options	Displayed data
6378975.345678	Data Type: Decimal "Northing: %.1f"	Northing: 6378975.3
6378975.345678	Data Type: Decimal "%10.2f N"	6378975.35 N
234985.45678	Data Type: Decimal "%10.2f E"	<u>234985.46 E</u> (" _ " is displayed as a space)
17.26064	Data Type: Decimal "KP: %.3f"	KP: 17.261
29.12345	Data Type: Decimal "Depth: %.1f m"	Depth: 29.1 m

Formatting: Control Codes

Format String	Description
%s	Outputs a text field and the width of the field will be the number of characters in the field
%f	Outputs a number to a default of 6 decimal places
%.3f	Outputs a number rounded to 3 decimal places
%12.3f	Outputs a number rounded to 3 decimals places and with a total width of 12, so that the output is padded with spaces to give a width of 8 before the decimal point (12 minus the three decimals and minus one for the decimal point itself).

Format String	Description
%012.3f	As above except leading zeros are output instead of spaces to make up the full width of the field.
%.0f	Outputs a number rounded to have no decimal places.
KP: %08.3f Km	Outputs a number with a total width of, including 3 decimal places and with leading zeros, plus the addition of a prefix "KP: ", and a suffix " Km", e.g. "KP: 0123.123 Km"

A format string, consists of both optional and required fields, and has the following structure:

%[flags] [width] [.precision]type

Sections shown with square brackets [] are optional, so the minimum format specification is the % sign and a type.

Formatting: Type Specification

The simplest format specification contains only the percent sign and a type character (for example %s). Type is a required character that determines whether the associated data is interpreted as a text string, or as a number.

The most frequently used types are f for numbers displayed in decimal notation), and s for text strings. A full list of types is shown in the table below.

Type	Description	Output Format
e	floating point number	Signed value in scientific notation having the form [–] d.dddd e [sign]ddd where d is a single decimal digit, dddd is one or more decimal digits, ddd is exactly three decimal digits, and sign is + or –.
E	floating point number	Identical to the e format except that E rather than e introduces the exponent.

f	Floating point number	Signed value having the form [–]dddd.dddd, where dddd is one or more decimal digits. The number of digits before the decimal point depends on the magnitude of the number, and the number of digits after the decimal point depends on the requested precision.
g	floating point number	Signed value printed in f or e format, whichever is more compact for the given value and precision. The e format is used only when the exponent of the value is less than –4 or greater than or equal to the precision argument. Trailing zeros are truncated, and the decimal point appears only if one or more digits follow it.
G	floating point number	Identical to the g format, except that E, rather than e, introduces the exponent (where appropriate).
s	text	Characters are printed up to the end of the field or until the precision value is reached.

Formatting: Flag Specification

Data flags are optional characters that control justification of output and printing of signs, blanks, decimal points, and octal and hexadecimal prefixes. More than one flag can appear in a format specification.

Flag	Meaning	Default if flag omitted
-	Left align the result within the given field width.	Right align
+	Always prefix the output value with a sign (whether + or –) if the output value is of a signed type.	Sign appears only for negative signed values (–).
0	If width is prefixed with 0, zeros are added until the minimum width is reached. If 0 and – appear, the 0 is ignored.	No padding.

#	When used with types e, E, or f format, the # flag forces the output value to contain a decimal point in all cases.	Decimal point appears only if digits follow it.
#	When used with types g or G, the # flag forces the output value to contain a decimal point in all cases and prevents the truncation of trailing zeros.	Decimal point appears only if digits follow it. Trailing zeros are truncated.
#	Ignored when used with type s.	

Formatting: Width Specification

An optional format entry, which specifies the minimum number of characters to be output. Data is padded with spaces to the left, unless a 0 is used in the flags, in which case leading zeros are output.

The width specification never causes a value to be truncated. If the number of characters in the output value is greater than the specified width, or if width is not given, all characters of the value are printed (subject to the precision specification).

Formatting: Precision Specification

The third optional field of the format specification is the precision specification. It specifies a non-negative decimal integer, preceded by a full-stop (.). This specifies the number of characters to be printed, the number of decimal places, or the number of significant digits (see table below).

For most projects, the precision specification is usually only required for the display of decimal values such as KP, Easting, Northing, depth, heading etc.

Unlike the width specification, the precision specification can cause either truncation of the output value or rounding of a floating-point value. If precision is specified as 0 and the value to be converted is 0, the result is no characters output. The type determines the interpretation of precision and the default when precision is omitted, as shown in the table below.

Type	Precision specification	Default behaviour
E, E	The precision specifies the number of digits to be printed after the decimal point. The last printed digit is rounded.	Default precision is 6; if precision is 0 or the period (.) appears without a number following it, no decimal point is printed.

F	The precision value specifies the number of digits after the decimal point. If a decimal point appears, at least one digit appears before it. The value is rounded to the appropriate number of digits.	Default precision is 6; if precision is 0, or if the period (.) appears without a number following it, no decimal point is printed.
g, G	The precision specifies the maximum number of significant digits printed.	Six significant digits are printed, with any trailing zeros truncated.
s, S	The precision specifies the maximum number of characters to be printed. Characters in excess of precision are not printed.	Characters are printed until last character is encountered.

Formatting: Prefix or Suffix Text

If a percentage sign is followed by text that has no meaning as a format field, the text itself is copied to the output. For example, to print the prefix “KP”, use %KP.

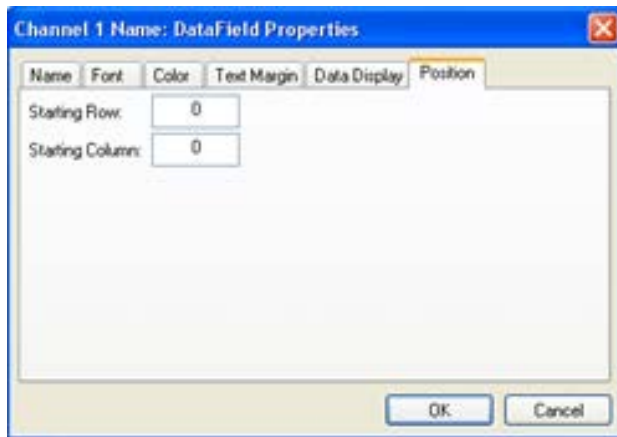
Similarly to add a suffix, place the required text after the Type specification.

For example:

KP: %08.3f Km	Outputs a number with a total width of, including 3 decimal places and with leading zeros, plus the addition of a prefix “KP: ”, and a suffix “ Km”, e.g. "KP: 0123.123 Km"
---------------	---

1.13 Positioning Data Fields

Data Fields can be positioned on the screen using the mouse to drag-and-drop, or by opening the properties of the item, via a right-click, and entering a row and column number on the “Position” tab of the Data Field Properties dialog.



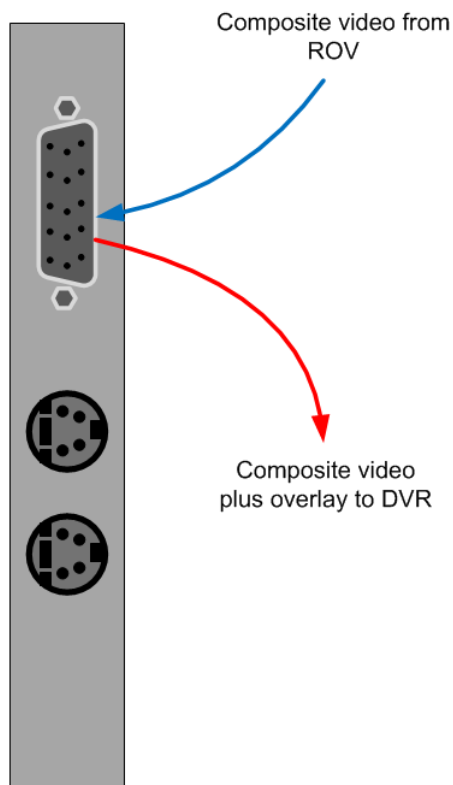
1.14 Running VisualOverlay on a Standalone PC

In some cases it is necessary to run VisualOverlay on a PC which is not itself being used to record the video. An example of this is the use of VisualOverlay with a multi-channel MPEG-2 version of VisualDVR. This requires a VisualDVR PC with one video capture card per video channel, which does not leave space in the PC to also house the video overlay cards. In these circumstances VisualOverlay needs to be run on a separate PC. This setup is described in the following sections.

A standalone VisualOverlay unit contains one or more overlay cards and is used to apply an overlay to raw video before it is fed into the VisualDVR recorder unit. The VisualOverlay unit takes the raw video source, applies overlay text/graphics and then outputs it to the VisualDVR recorder or to an external monitor.

1.14.1 Hardware Setup: Video Input and Output

The diagram below shows input and output connections to the Vitec VM-OSD card via the Overlay Breakout Cable which use composite BNC connections.



1.14.2 Software Setup: Survey String on VisualDVR Unit

You should run the VisualOverlay PC on the same network as the other VisualDVR computers, so that it will automatically pick up any survey data fields that have been configured on the main VisualDVR unit using the serial data input interface. These fields

will be displayed in the DataField section of the VisualOverlay application. If you do not immediately see the expected data fields, click Apply in the Survey Position data Input screen in VisualDVR.

1.15 Hardware Overlay Emulator

VisualOverlay can emulate a hardware overlay generator such as the Taylor Lann or Oceantools units. This allows you to connect a serial cable on which you will receive commands that you would normally send to the hardware overlay generator.

To enable this option go to the "Serial Input" menu and select "Enable Hardware Emulator".

A new section will open in the lower left corner of the display. Use the Settings button to select the hardware type that you want to emulate, and then set the COM port settings. Click the Start Input button to switch on the overlay capability.

2 Contact Details

Forum Subsea Technologies has offices in many parts of the world. The VisualSoft team is mostly based in Aberdeen in the UK, but we also have regional sales staff and some support services in other parts of the world.

The following pages have details of how to contact either our sales team or our support team, by telephone, email or by post.

2.1 Contact Details – Support



Website: f-e-t.com/visualsoft

Most support questions are most easily answered by email:

Using email gives our support team time to think about your problem before they reply, and time to test the software if necessary. If your question is urgent, do not hesitate to telephone us, but even then it may be best to send an email before you call, even if only a few minutes before you call. Sending us an email will allow you to include screen captures, data files and other things that may make it easier for us to quickly and accurately understand your problems.

Support Email (recommended)	visualsoft.support@f-e-t.com
Phone: UK & Global, during UK office hours	+44 (0) 1224 744 000
Phone: UK & Global, outside UK office hours Available for clients with a valid support contract. Operates from 17:00 until 08:30 UK time each night Monday to Thursday, and all through the weekend from 17:00 Friday evening until 08:30 Monday morning.	+44 (0) 1224 363 999
Phone: USA, 24/7 During Houston office hours this will connect you to our US team. At other times, or if the US team is busy, it diverts to the UK team.	+1 713 454 7091

2.2 Contact Details – Sales



Website: f-e-t.com/visualsoft

For address and telephone/fax details, please select the appropriate office for your region:

Aberdeen, UK	FET – VisualSoft Cumberland House Endeavour Drive Arnhall Business Park Westhill Aberdeenshire AB32 6UF UK
Sales and rental enquiries:	visualsoft.sales@f-e-t.com
Telephone:	+44 (0) 1224 744 000

Houston, USA	FET – VisualSoft 10344 Sam Houston Park Drive, Suite 300 Houston TX 77064 USA
Telephone:	+1 713 329 8273

Singapore	FET – VisualSoft Asia Pacific Rental Service
Email	visualsoft.sales@f-e-t.com
Telephone:	+65 9643 7433 / +65 9230 8138

Index

- B -

Breakout cable - Vitec VM-OSD 12

- C -

Contact details 52

Contact details - VisualSoft Sales 54

Contact details - VisualSoft Support 52

- E -

Email - VisualSoft Sales 54

Email - VisualSoft Support 52

- O -

Out-of-Hours contact 52

- T -

Telephone - VisualSoft Sales 54

Telephone - VisualSoft Support 52

- V -

VisualSoft Sales 54

VisualSoft Support - Contact details 52

Vitec VM-OSD 12

VM-OSD - Breakout cable 12

- W -

Website 52, 54

