

## Introduction

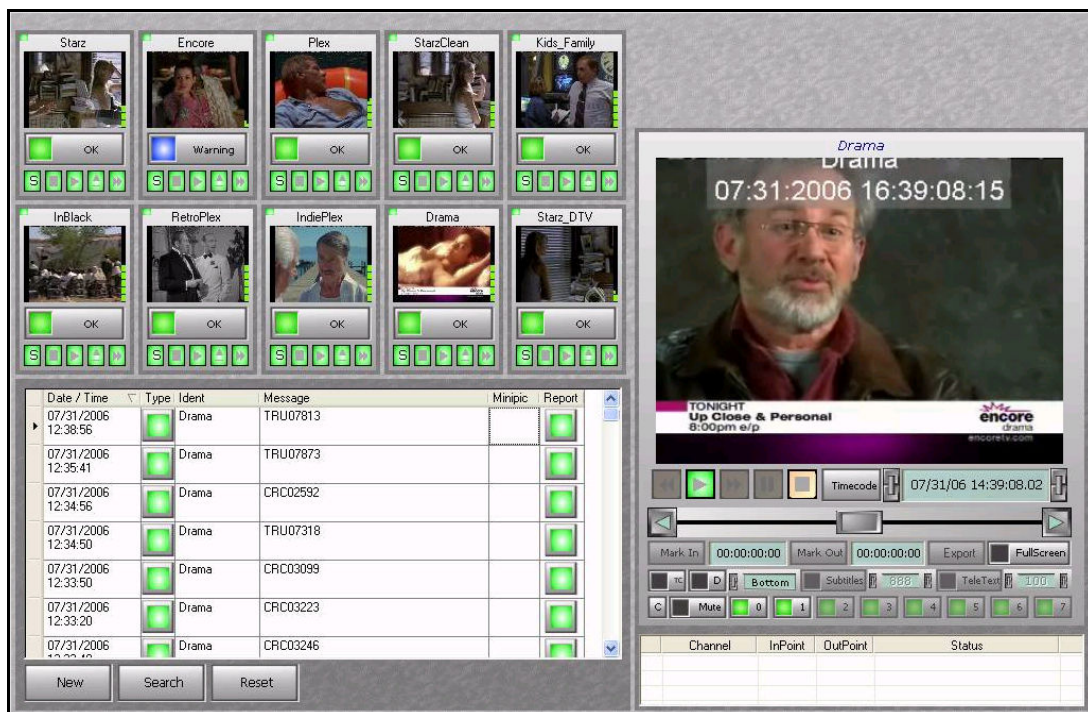
12<sup>th</sup> August 2010

ContentProbe is a unique PC solution for the recording, monitoring and verification of video, audio and auxiliary data in tape-less broadcast, corporate offices and other communications environments. ContentProbe can be used to record signals for full legal compliance and proof of transmission as well as other tasks such as simple replacement of the many functions traditionally performed using VHS videotape.

ContentProbe features a confidence view of the video and audio input signals and on-demand streaming of the “live” content as well as a convenient multi user solution for review of recorded content. Content can be stored for a number of hours, days or longer as required.

(Note: storage capacities vary with choice of device, selected options and recording configurations).

For recording of signals such as off-air broadcasts or feeds in a broadcast monitoring environment, the confidence view and streaming capabilities of ContentProbe are an inexpensive alternative to traditional return path infrastructure. Simple confidence monitoring functions can be augmented by automatic fault analysis and content verification tools which provide automatic warnings and alerts when faults and other conditions are detected.



A typical view of ContentProbe shows multi-channel signal confidence, logging and content review modules.

## Recording Video and Ancillary Data

As a cost effective content recording solution ContentProbe is normally supplied with analogue video inputs via BNC or RCA connectors. These inputs allow simple and direct connection to “broadcast”, “professional” and “consumer” video environments alike. By adding appropriate distribution and D to A converter equipment ContentProbe can be effectively integrated into typical SDI video infrastructure. ContentProbe records standard definition PAL, SECAM and NTSC signals in full screen and widescreen presentation aspect ratios.

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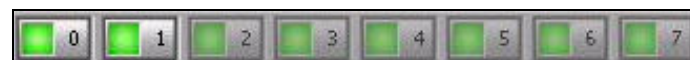
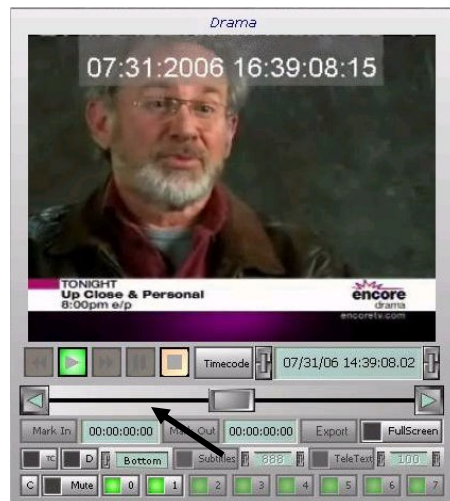
With the appropriate option modules, ContentProbe can be used to record and decode Tele-text and specified VBI data services. This capability ensures that current regulations and legal requirements for compliance recording of broadcast content can be met.



Modules showing recorded and decoded VBI data e.g. Tele-text and subtitle caption pages

## Recording Audio Signals

A standard ContentProbe supports two audio channels for each video input. Audio signals can be on XLR balanced or RCA unbalanced connections and can be expanded to four or eight channels (per video source) by adding the appropriate expansion module options. In the review mode the viewer module provides the operator with convenient tools for the selection / de-selection of each audio channel for mixed or isolated monitoring.



Viewer controls showing audio channels 0 and 1 selected for review.

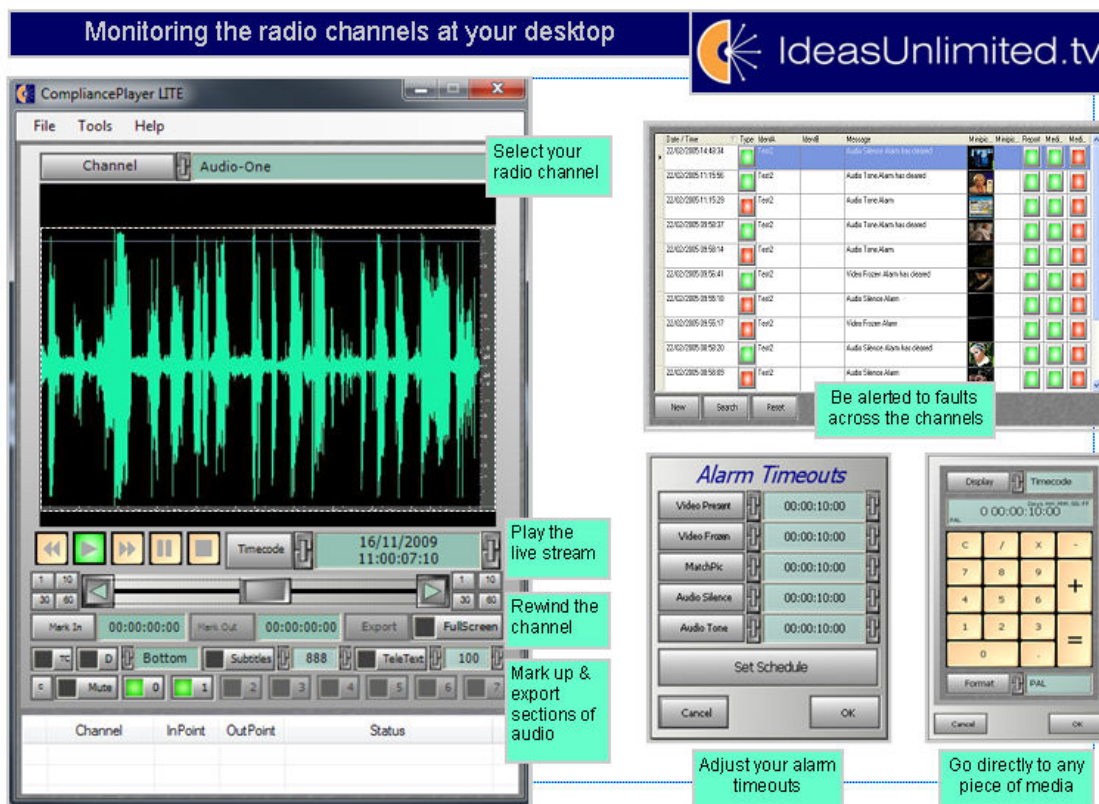
## Recording Radio Signals

The MRF & CRF Radio models are compact 1RU servers which will record up to 32 channels of AES/EBU audio, or 16 Balanced Analogue channels, or up to 16 FM/AM radio channels using internal tuners and are ideal for regulatory and logging applications. All MRF & CRF units include FaultTracker

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as standard which monitors for Audio Silence and Audio Tone. Alarms by SNMP & E-mail (also SMS or GPI with hardware option). Also features On-demand Streaming and Instant Rewind of radio channel.



Sample components/icons for monitoring your radio channels

### Encoding and Storage

ContentProbe is designed to provide uninterrupted recordings of video, audio and data on a continuous loop basis. ContentProbe is a robust solution for continuous recording operations and is typically configured with RAID storage to provide 15 – 720 days per channel. No routine maintenance or down time is required and all pertinent content and associated data is continually maintained. ContentProbe is a live encoding system that supports Microsoft’s Windows Media 9 algorithms. The record algorithms can be configured for data rates between 256 – 1024kb/s. When viewed on standard PC displays WM9 recordings made at 512kb/s are generally considered to be similar to VHS quality.

TV - Total number of days per ContentProbe (Storage Capacity in Days)	Level 90	Level 180	Level 300	Level 360	Level 720
Encoded at 256kb/s	180	360	600	720	1440
Encoded at 512kb/s	90	180	300	360	720
Encoded at 1024kb/s	45	90	150	180	360

Radio - Total number of days per ContentProbe (Storage Capacity in Days)	CRF AES32	MRF BA16	MRF FM8	MRF FM16
Encoded at 64kb/s	1344 (42 per channel)	1360 (85 per channel)	1360 (170 per channel)	1360 (85 per channel)

(Note: Stored capacity per channel is dependent on encode data rate, number of channels and model selected).

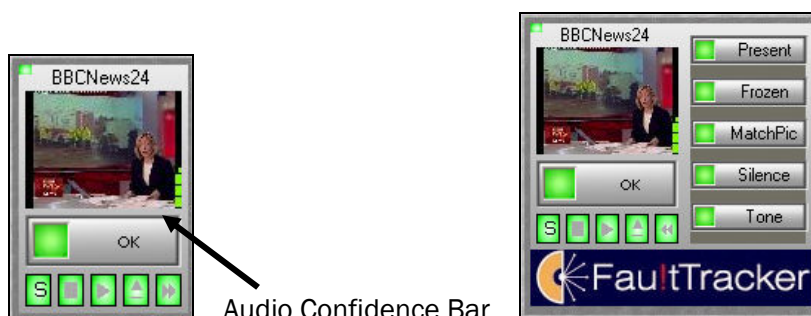
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### Using ContentProbe to Review Recordings

ContentProbe solutions include a desktop application for the review of recordings. No direct logon / connection to the ContentProbe itself is required, users simply attach to the content via the client application when it is running. The desktop application offers a configurable environment for customization of user layouts, options and configuration of the system.

Every channel provides a "live" confidence output which can be seen when the desktop application is running. The standard confidence tools can be supplemented to provide additional valuable information in engineering or fault sensitive environments. The fault and monitoring status information is provided by the optional FaultTracker module which detects loss of signals, frozen images, silence and tone.



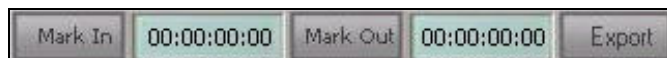
Basic channel confidence and FaultTracker enabled fault status monitoring

Typically the displayed confidence content is 5-10 seconds behind real time. The confidence output is in the form of a video thumbnail and audio bar meter. For reduced use of network bandwidth the confidence content is refreshed at the rate of 1 video thumbnail frame every 2-4 seconds. A full bandwidth stream (WM9 format at 256 -1024kb/s) can always be acquired on demand at any time.

ContentProbe provides a full bandwidth "live" content stream to the desktop when required. Content seen at the desktop is typically around 30-45 seconds behind real time which is the result of the time to encode and stream to the user desktop and normal network traffic delays. However the content can be reviewed in forward and reverse motion (jog, shuttle, and fast rewind modes supported).

No files are transferred to the local computer for normal browsing. However, if the user determines, for example, to distribute a portion of the recording via email or on to DVD disk, this can be activated using the export feature. Under these circumstances content selected between the IN / OUT points defined by the user is transferred to a local file.

Content can be reviewed and marked for export using traditional transport controls to shuttle and jog through the recordings or by manual entry of the required time-codes.



Export content IN / OUT point time-code markers.

The media between the in and out-points is exported (copied) to a local Windows Media file when both points are set. During the set up of an export the user has the option to select which audio channels to export with the file and can also choose to include the channel ID and time-code in vision and where to position the information.

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Review Module Tools in Close Up



Viewer module for the review of "live" and recorded content has simple transport and export controls.

Simple transport controls similar to those of a VHS machine are provided.



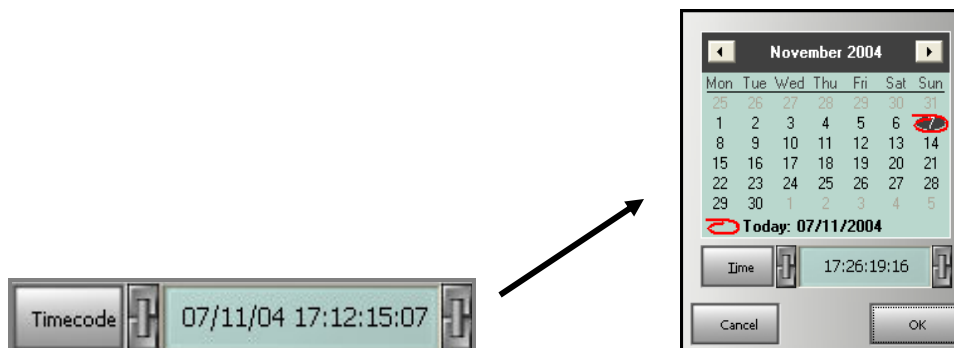
Rewind, Play, Fast Forward, Pause and Stop buttons

In addition to these primary controls several shortcut functions are supported. Buttons to advance and reverse through the recording by a minute at a time are available on the ends of the slide bar, whilst dragging the middle slider will allow advance or reverse by increments of up to 1 hour (provided media exists at range). Jog functionality is provided by using the scroll-wheel of the mouse.



Slider controls to shuttle and step through recordings

A scroll wheel to the left of the time-code window will advance and reverse through recorded content in steps of 1 second, the right scroll wheel by steps of 1 frame. Jump direct to a specific time code in date and time format can be entered via a pop-up calendar and keypad.

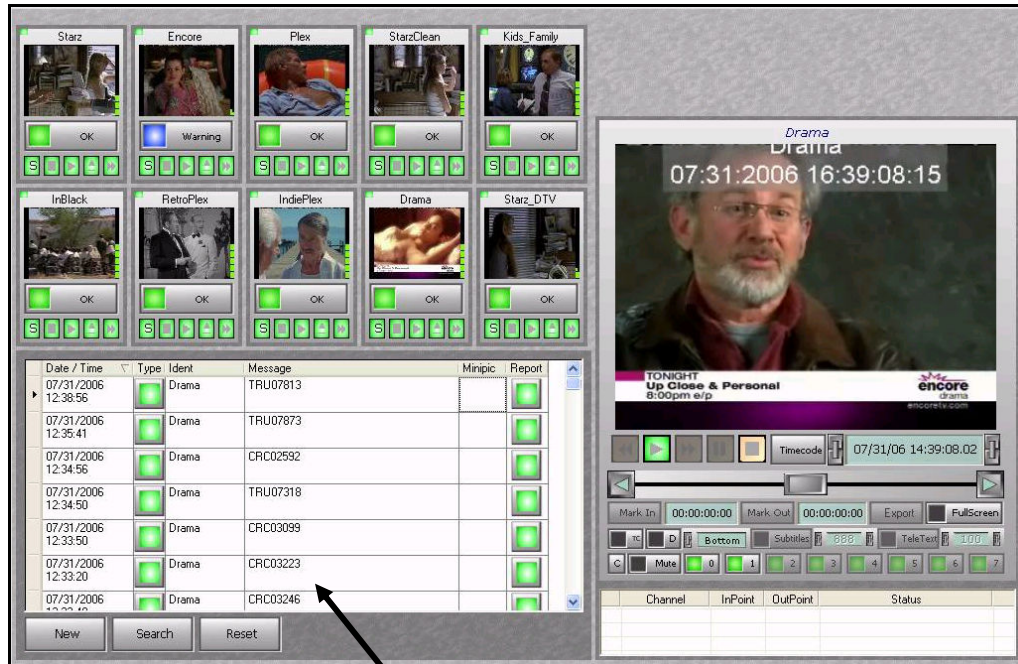


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Quick access to content via calendar and time-code tools with scroll wheels to step through seconds and frames

In addition to navigation by time-code the Play-List Log segmentation module allows channels to be segmented and indexed by program IDs and start times from supported automation systems.



Log window used to index recordings and store media ID from play-out automation event logs

Logged programmes can be found instantly by clicking in the Log window on the required programme entry (In the example entries in the “Message” column are the programme and event IDs).

## Fault Monitoring and System Health Checks

ContentProbe can be equipped with a unique fault monitoring module known as FaultTracker. This optional module features detection of Video Present, Video Frozen, Configured Stills, Audio Silence and Audio Tone. The recorded signals are monitored for the presence of these fault conditions. Faults are registered in the active log window and associated alarm features can be enabled. With appropriate hardware options supported alarms can be used to trigger GPI, SMTP, SNMP or SMS alerts.

With the FaultTracker module enabled ContentProbe recordings will be automatically segmented for quick access to any alarm incidents shown in the Log window. Each alarm has a time stamped reference, mini-picture of the video at the time of the alarm and a short cut to a PDF report file for the incident. These tools will aid operators, engineering and others to quickly investigate and respond to faults identified by the system.

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Date / Time	Type	IdentA	IdentB	Message	Minipic...	Minipic...	Report
22/02/2005 14:48:34		Test2		Audio Silence Alarm has cleared			
22/02/2005 11:15:56		Test2		Audio Tone Alarm has cleared			
22/02/2005 11:15:29		Test2		Audio Tone Alarm			
22/02/2005 09:58:37		Test2		Audio Tone Alarm has cleared			
22/02/2005 09:58:14		Test2		Audio Tone Alarm			
22/02/2005 09:56:41		Test2		Video Frozen Alarm has cleared			
22/02/2005 09:55:18		Test2		Audio Silence Alarm			
22/02/2005 09:55:17		Test2		Video Frozen Alarm			
22/02/2005 08:58:20		Test2		Audio Silence Alarm has cleared			
22/02/2005 08:58:09		Test2		Audio Silence Alarm			



PDF report files are accessed by clicking the green "Report" button in the Log window

ContentProbe is designed for resilience to failures and has a watchdog application to monitor system health and performance. Each module installed on a ContentProbe system is registered with the on-board watchdog during configuration. The Watchdog also checks that the ContentProbe is recording media to the discs. It performs an hourly check of the recorded content to make sure there is valid media for the previous hour. Alarms are triggered if valid media is not present.

### Summary of the ContentProbe System

The full ContentProbe range comprises a number of high performance 1RU Video & Audio monitoring devices. They can be used stand alone or as part of a flexible and comprehensive system for recording, review and automatic monitoring of signals. ContentProbe is designed as a modular system, allowing software functionality to be scaled and configured for a variety of uses.

### Technical Specifications

See individual product specification documents.

### IdeasUnlimited Support

3 levels of support contract are available with the ContentProbe range.

Standard includes Email support and return to factory repair of hardware  
 Gold includes Email and telephone support during UK office hours and return to factory repair.  
 Platinum includes a standby / spare unit on site, Email support, Telephone support.  
 Support contract prices are based on fixed percentage value of system list price at purchase and are reviewed annually.

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### User Testimonials:

“At 1RU, ContentProbe uses just 5 per cent of the rack space real estate we needed to house the VHS tapes for compliance recording. IdeasUnlimited.tv offered the most flexible solution at the best price and we now plan to roll out the system to all the channels Yoomedia hosts.”

- *Chris Pearman, technical director, Yoomedia*

“CNBC Europe’s staff at remote locations now have all broadcast content at their fingertips so they can find the footage they need for themselves rather than involving the operations team. In addition, by storing two channels for around the same price as one, it saves considerable money.”

- *Neil Burt, head of technology, CNBC Europe*

“ITN produces news programmes for ITV1, the ITV news channel and Channel 4 and so generates vast quantities of content to record to comply with Ofcom regulations,” “ContentProbe gives us the most cost-effective and space-efficient storage, improves quality and saves significant time when compared to using VHS.”

- *Paul Flook, head of broadcast engineering, ITN*

For more information on the full ContentProbe product range please visit [www.IdeasUnlimited.tv](http://www.IdeasUnlimited.tv) or contact IdeasUnlimited by telephone: +44 870 162 7200

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