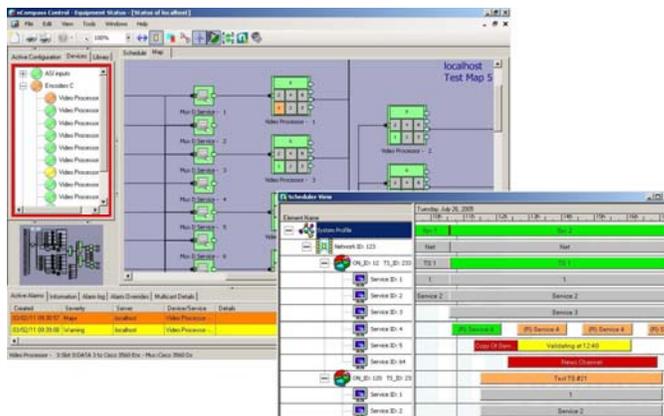
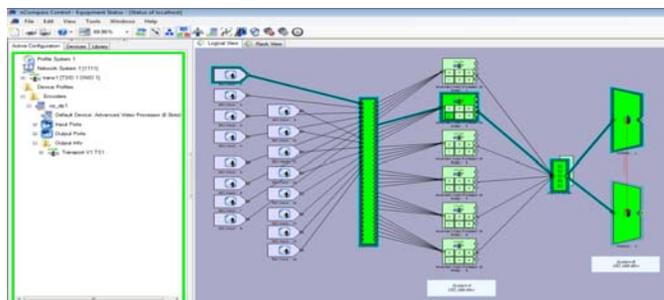


# nCompass



nCompass by MediaKind offers service providers powerful and effective management of MediaKind's full range of video headend systems and broadcast products. nCompass has been developed to provide a world-class management and control solution to accompany our world-class encoding and broadcast systems whilst providing a highly open and integral approach to third party applications and system devices. The application platform enables a unified view control of multiple devices within an elegant and easy to use interface.

nCompass will continually monitor every device within a local system, and also provides automated failure detection, redundant component switching and configuration of the fail-over components. Scalability is ensured with a flexible licensing model and enables nCompass to grow in step with system growth. This approach reduces upfront costs and ensures a future-proof investment. nCompass will meet the management and control requirements of the full spectrum of headend configurations – from smaller edge sites to complex satellite, cable, terrestrial and IPTV super headends across a wide area network or local area network.



## nCompass Director module

Delivering valuable professional broadcast video content over satellite, cable and telco networks requires the highest level of security in order to protect against theft and unauthorized viewing. nCompass Director is an optional module of nCompass and offers an advanced software-based solution for Simulcrypt Conditional Access (CA) that authorizes individual and groups of receivers across sites under maximum security. Watermarking technology is available to further protect content and detect unauthorized use.

nCompass Director also manages, controls and enables over air upgrade for MediaKind's market leading receivers designed for high-quality contribution and distribution services, including the latest RX8000 series. Built for mission-critical, real-time SD and HD content delivery, nCompass Director's GUI enables a single system view of the entire receiver population enabling operators to schedule or make changes on the fly to protect and secure their video content.

## nCompass Connector module

Integral to MediaKind's Content Exchange solution for fiber networks is nCompass Connector. This is an optional module of the nCompass control and management platform designed to offer an even greater level of simplification with the concept of 'less clicks is more' approach. The design is highly user-centric and enables operators not familiar with the technical detail of system & devices parameters/configurations to carry out a range of complex operations via a single button on the system Graphical User Interface.

Built for mission-critical, real-time content delivery for point-to-point and point-to-multipoint connections, nCompass Connector's graphical event scheduler manages the allocation and connection of resources for video content distribution over IP based networks.

The nCompass Connector management system is a scalable solution and is designed to provide a cost efficient way to link medium to large-scale multi-site distribution facilities. Using the system's control of individual devices and monitoring capabilities, nCompass Connector provides easy and affordable stream delivery between sites keeping the operator informed of equipment status at all times. Through use of the nCompass client, customers may also manage, control and monitor the system status from a remote location. Integration with ScheduALL from Net Insight, further simplifies equipment configuration.

## Product Benefits

### Wide ranging flexibility, and device support

nCompass excels in its breadth of support and flexible configurations. The application will control many types of encoders, receivers, de-scramblers, multiplexers, scramblers, edge QAMs, modulators and other third-party switches and devices.

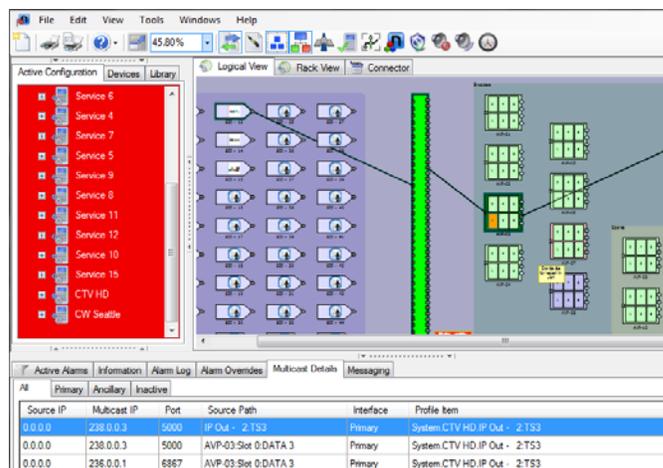
It puts the service provider in control of all transport streams, channels and devices with the widest range of configuration options, and is easily accessible through a remote client user interface.

### Powerful Redundancy and Remultiplexing Capabilities

Service providers with 1+1 or n+m redundancy requirements will benefit from nCompass' ability to rapidly and automatically reconfigure systems on the fly in the event of a device or system failure. nCompass is also ideally suited for digital turn-around applications which can utilize the management system's powerful re-multiplexing capabilities including real-time PSI regeneration, remapping channel number and PID information.

## Intelligent Management

nCompass enables operators to view status, capacity and alarms at the system, chassis or module level, minimizing down time and ensuring rapid fault isolation/resolution.



## Cost-effective Security

Director is more cost effective than traditional DTH CA systems and was designed as a world-class CA system for MediaKind's best-in-class receivers, with specific capabilities for contribution and distribution. By eliminating smart cards and replacing with embedded Simulcrypt CA, operators can save on card costs and maintenance while maintaining the highest possible security.

MediaKind and Nexguard have joined forces to offer a Forensic Watermarking security solution for live video Content Distribution applications. This option brings the next level of security under the control of Director together with the RX8200 receiver platform.

## Targeted Control

MediaKind puts operators in control of each receiver, enabling targeting of specific devices and receiver populations for different levels of authorization and services. This highly flexible system is ultimately scalable and can support large populations of receivers over multiple distributed sites.

Administrators are also able to access the system from anywhere on the network using a remote client. This introduces a layered approach to combining disparate systems that may be geographically dispersed.

## All-in-one Highly Secure Conditional Access and Receiver Control System

A more cost effective offering above that of a traditional DTH CA system, Director offers operators an all-in-one Simulcrypt CA and control system with many unique features designed specifically for content contribution and distribution in a broadcast environment. The modular approach of Director enables organizations with the ability to mix-and-match key elements of the application. This ultimately results in a system that will uniquely meet operator requirements for receiver management and control, including addressing receivers with a multitude of command and control options and simple configuration schemes. Director is highly integrated with nCompass Control by MediaKind for a complete management solution that can be administered from a single PC console.

### Open and integrated

nCompass has integrated with numerous third party devices as part of the overall MediaKind system proposition. It also has a defined API which enables northbound integration into third party applications providing such functions as high level monitoring or scheduling. This provides an open approach to full integration capabilities whilst considering existing systems and applications.

### Simple, flexible and scaleable

Easy to review and implement Scheduling functions and ability to choose simple regularly used favourite connections within a content distribution and exchange environment enables ultimate flexibility and user empowerment when using the application. The ability to expand and scale services as line ups and customer take up grows is ultimately important. nCompass can add services to a system quickly and easily with minimal impact on existing services.

## Options

### nCompass Client GUI

The remote client user interface allows a single client to monitor and control any number of nCompass servers across a wide area network or local area network.

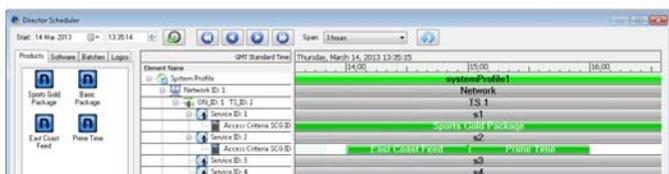
### Range of PC Hardware Platforms

There are a range of HP PC servers available. Each comes fully configured with either Microsoft® Windows Server 2012 or Windows 10, back-up utilities, and the required level of nCompass software. There is also an option for a 1+1 redundant solution for maximum availability: the nCompass Integrity solution.



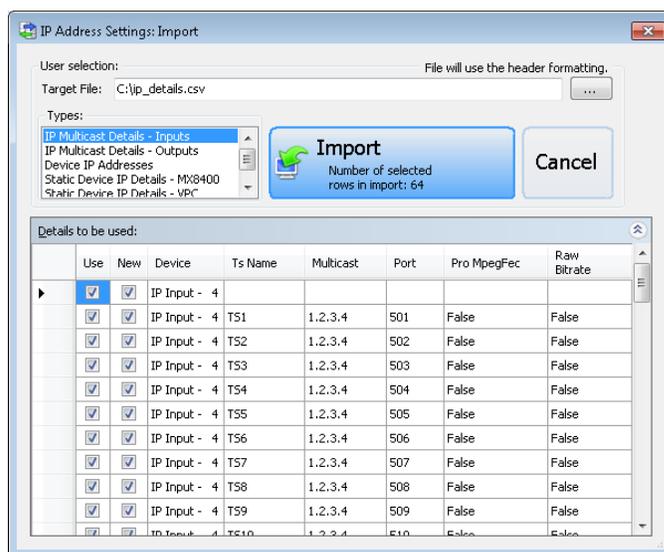
## Specifications

- Graphical hardware set-up and equipment layout
- Auto-discovery of equipment capabilities for faster provisioning and environment creation
- Inventory report and export of equipment capabilities, boards, software versions and licenses
- Wizards for equipment layout, renaming and switch connection for superior handling of large complex systems
- Graphic timeline scheduling of service configurations



- Monitors system component and device health status via an equipment graphic map
- Route view shows the equipment in use per component, service or transport stream
- Automatic 1+1 or n+m redundancy protection switching
- Configures and monitors Reflex™ Statistical Multiplexing. Local or remote Reflex is available for HD/SD MPEG-4 AVC and MPEG-2
- Support for the latest HEVC, MPEG-2 and MPEG-4 AVC card based encoders offering module and chassis based redundancy
- Dynamically generates PSI and SI according to configuration changes
- Full re-multiplexing support including real-time PSI regeneration, and dynamic rules-based pass-through of descriptors
- DVB Simulcrypt integration with all major CA vendors
- Choice of internal EIS or integration with third-party EIS using standard DVB interfaces
- External SNMP interface for integration with higher level management (OSS/BSS) systems
- Defined remote interfaces for third-party control, e.g. automation
- Flexible user-access control to prevent unauthorized access
- User customisable views – changing service icons, route views
- High Priority service protection utilizing hot standby configurations
- Enhanced routing control ensuring users that services are routed correctly
- Module level control of MediaKind’s Encoding portfolio
- User configurable e-mail notification of monitored alarms
- Enhanced confidence monitoring through graphical thumbnails for a service, device or group
- Support for a wide range of SDI router manufacturers including Leitch/Harris, Evertz, Nevion, and Sandar.\*

- Support for IP routers from manufacturers such as Cisco, and Juniper (monitoring).
- SCTE 35 support for Digital Program Insertion (DPI), triggered via GPI or SCTE 104 (over IP or VANC)
- Integrated with third-party devices and applications including; EventIS and Barrowa SI generators, Enensys and T-VIPS DVB-T2 Gateways and Axcera, Envivio for ATSC M/H systems
- Receivers can be entitled and de-entitled to prevent unauthorized viewing of content using the built-in Simulcrypt Conditional Access module
- Receivers can be addressed and controlled individually or by groups
- Groups of receivers can be nested together within nCompass Director
- Net Insight ScheduALL integration with nCompass Connector
- Customers have the flexibility to combine nCompass Director with any other Simulcrypt CA vendor
- Support for NexGuard Forensic Watermarking (via RX8200)
- There is an extensive range of over-air receiver control options, including force service and carrier tuning, relay control and local lock-out
- Ability to clone a receiver’s configuration and download over air from nCompass Director
- Software updates can be downloaded over-air, without the need to visit the site. This can be achieved with a single receiver, a specific group or the whole receiver population
- Client software enables remote access of head-end control station
- Varying levels of user management protect the software application from unauthorized access
- Easy-to-use graphical user interfaces to configure and control the secure conditional access
- Database mirroring to an off-site backup for mission-critical applications



\* Leitch pass-through protocol support for cross point configuration. Alarm reporting on certain specific models only.