# HDCP PRO EXPLAINED

**MEDIASTAR**
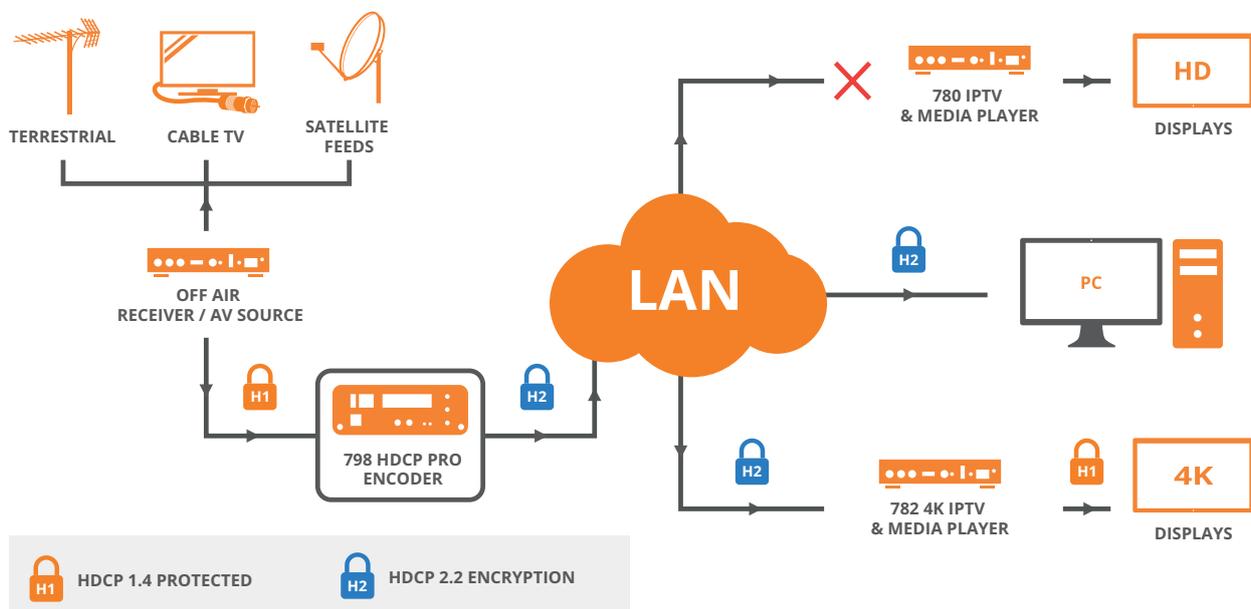MEDIASTAR SYSTEMS

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## > What is HDCP Pro?

Intel developed the High-bandwidth Digital Content Protection (HDCP) specification to protect digital entertainment media broadcast across digital interfaces. The vast majority of movie studios and broadcasters support this link encryption standard and have begun switching across to HDCP encrypted content by removing non-HDCP compliant ports from their set top boxes and preventing viewing on non-HDCP supported devices. This is why HDCP Pro matters to the Pro AV market and why it will have a significant impact in the coming years.

The Digital Content Protection organisation, which licenses technologies using HDCP, describes the specification as a means to 'enable a secure connection to protect copyrighted content when connecting sources (e.g. set top boxes, Internet Delivered Content Devices, DVD, Blu-ray) and "sinks" (display devices with one or more digital interfaces such as HDMI, DVI, DisplayPort, MHL, Miracast and others). Common applications are large format displays, desktop monitors and audio equipment on a secure network.

While the HDCP content protection system worked well in a domestic environment, for many years there were too many restrictions for corporate users to be able to access permission from the content provider so that it could be distributed across multiple locations.

However, in 2016, HDCP 2.2 Pro was introduced to take advantage of the billions of devices already supporting HDCP. Over the past four years, the AV industry has taken full advantage of this opportunity, connecting multiple devices onto commercial AV networks allowing content to be legally transmitted and watched on any connected display.

TERRESTRIAL   CABLE TV   SATELLITE FEEDS

OFF AIR RECEIVER / AV SOURCE

798 HDCP PRO ENCODER

LAN

780 IPTV & MEDIA PLAYER — HD DISPLAYS

PC

782 4K IPTV & MEDIA PLAYER — 4K DISPLAYS

H1  HDCP 1.4 PROTECTED    H2  HDCP 2.2 ENCRYPTION

## > Do I have to comply?

The HDCP specification was designed to prevent illegal copying of digital media and it secures and encrypts the connection between not just the source and the display but the entire signal path, including cabling. Most commercial content is now 4K, and this is primarily where HDCP 2.2 Pro is targeted. As a result, if an organisation is using a "sink" device that fails to comply with the standard, the display will show an error message and the attempt to broadcast media content will fail.

To enable commercial content provision, HDCP 2.2 Pro enables the source device to provide HDCP protected output to an HDCP 2.2 Pro encoder. This then encodes, encrypts, and distributes the media content across the network to the endpoints, which receive and decrypt the stream and output the content to a display using an HDCP protected HDMI cable.

The onus falls on systems integrators and resellers to ensure that the solutions they are specifying for customers comply with HDCP 2.2 Pro, and they too need to meet certain requirements. These do not restrict who can manage installations, but they will need to understand the industry-driven standards and ensure these are carried through at every point in the installation so that secure video content can flow from the provider to the endpoints and screens.

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### > Enabling compliant content with MediaStar.

The MediaStar IPTV system has been developed to take legally subscribed, high value, or licensed video content and simultaneously broadcast it efficiently in a compressed, network friendly multicast stream to multiple screens across an IP network using a comprehensive set of management tools.

The MediaStar 798 HDCP 2.2 Pro enabled encoder will take the protected content from external providers and distribute it to an unlimited number of screens through MediaStar 782 HDCP Pro enabled IPTV Media Players.

AV/IT specifying consultants, design build resellers and systems integrators must inform and educate end customers of several requirements specifically related to the use of HDCP 2.2 Pro-enabled solutions. With regard to MediaStar systems, these are as follows:

> For each HDCP Pro installation, the end user must sign an agreement specifying that the equipment will be used in an authorised location, that the user has the right to display the picture content and that the equipment will be returned to MediaStar Systems at the end of its life for disposal.

> The MediaStar 798 HDCP Pro Encoder has to be updated every calendar quarter with an updated list of revoked HDCP devices (displays). This can be done automatically with an internet connected encoder or with a manual file download using a USB key. The encoder also requires access to an authoritative NTP time server to ensure the update is done regularly.

> The 782 Media Player must be on the same LAN as the encoder. This is checked with a timed response message between the MediaStar 798 encoder and the MediaStar 782 Media Player, which prevents HDCP Pro from being used across the internet.

### > Managing HDCP protected content

With HDCP Pro-compliant encoders and Media Players in place, it is important to ensure that the protected content can be controlled and maximised using a single point of management, regardless of whether it is being distributed to a few people in one location or to thousands in multiple offices. MediaStar Media Manager System Control Software 467 works in tandem with the MediaStar 798 HDCP Pro encoder and 782 HDCP Pro enabled IP Media Players and enables users to administrate content across the IP network.

With full control over the media environment, users can capture, manage, store and display all of their media assets and organise pin-point targeting of content to create maximum impact, confident in the knowledge that they are distributing it legally and securely in compliance with HDCP 2.2 Pro.

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> ## What are the key differences between HDCP 2.2 and Pro?

For the Pro AV Market, HDCP 2.2 will be adequate for a meeting room or for small-scale projects but this comes at a cost in terms of dedicated hardware and network switches with no ability to augment the transmission with appropriate enterprise information. In addition, it is not scalable or manageable for large installations. The chart below provides a useful comparison.

|  | HDCP 1.x | HDCP 2.2 | HDCP 2.2 PRO |
|---|---|---|---|
| Networked | No | Yes | Yes |
| Max End Points | 128 | 32 | Unrestricted |
| Start/Stop Tolerant | No | No | Yes |
| UHD/4K Compatible | No | Yes | Yes |
| HDCP Legal Only | No | No | Yes |
| Data Rate | Uncompressed | Uncompressed High | Compressed |
| Scalable (50 Endpoints) | No | Yes Capital Intensive | Highly Scalable (1000s) |
| Uses Existing Network | No | No - dedicated CAT 6 10 GBS | Existing 100mb, 1GB |

# IF YOU REQUIRE FURTHER GUIDANCE, PLEASE CONTACT US