

## Release Notes for DLP Cinema® Series-2 Production 3.1 Software 15 – April – 2011

This release package, named Prod3.1.release, can be installed on either a 0.98DC2K system, a 1.2DC2K system, or a 1.38DC4K system. The ICP load / install procedure will detect the type of satellite attached and install the appropriate satellite firmware and sequences automatically. If you have no satellite formatters attached when you install the release package, you may not get the satellite firmware and sequences installed that you intended. If you move an ICP between systems with different satellite hardware types, you must send the Install command again to correctly install the satellite firmware and sequence that match the new configuration. You do not have to reload a package, it is still resident on the ICP, but you will have to reinstall the current package from the slot (either A or B).

If you are upgrading an ICP from Prod2.1 or earlier, the release package named “InstallMeFirst.release” that is included in the ICP Prod3.0 release package **must** be loaded and installed on the ICP, and the ICP must be rebooted, **before** attempting to load the release package named “Prod3.1.release”. The release package “InstallMeFirst.release” contains updated commands and binary files necessary for the ICP to recognize and correctly interpret the release package “Prod3.1.release”. The release package “InstallMeFirst.release” should only take approximately 60 seconds to install once loaded onto the ICP. The release package “Prod3.1.release” can take several minutes to completely install. Please note that the time to install “Prod3.1.release” on a DC4K system will be longer than for a DC2K system as the configuration bitstream for the DC4K satellite FPGA is more than triple the size of the DC2K satellite code.

**Please make sure you reset the ICP through the RESETZ signal, or a power cycle after upgrading software. Some applications and software are not complete until the entire ICP is reset.**

**WARNING: YOU MUST NOT DOWNGRADE AN ICP WITH THE 16MB FLASH TO AN ICP PRODUCTION RELEASE LOWER THAN PRODUCTION 1.4. IF YOU DO, YOU WILL MAKE THE BOARD NON-FUNCTIONAL.**

Production release 3.1 represents the ICP software and firmware as defined in TI Document 2509066 Revision O, “Product Specification for DLP Cinema® Series 2”. It can be identified by the following version information as read back from the ICP.

<b>0.98 DC2K</b>		<b>1.2 DC2K</b>		<b>1.38 DC4K</b>	
Kernel	2.06(10)	Kernel	2.06(10)	Kernel	2.06(10)
ICP Main SW	3.01(324)	ICP Main SW	3.01(324)	ICP Main SW	3.01(324)
ICP Main FW	3.01(84)	ICP Main FW	3.01(84)	ICP Main FW	3.01(84)
Secure Processor	1.06(0)	Secure Processor	1.06(0)	Secure Processor	1.06(0)
FMT Main SW	4.05(151)	FMT Main SW	4.05(151)	FMT Main SW	4.05(151)
FMT Main FW	4.05(129)	FMT Main FW	4.05(129)	FMT Main FW	4.05(129)
FMT Satellite FW	3.00(229)	FMT Satellite FW	4.05(82)	FMT Satellite FW	0.01(160)
FMT Sequence	0.05(37)	FMT Sequence	0.06(48)	FMT Sequence	1.03(0)
FMT DMD File	0.00(13)	FMT DMD File	0.00(13)	FMT DMD File	0.00(13)

ICP Production 3.1 contains the full functionality of DLP Cinema® for the 0.98 DC2K, 1.2 DC2K, and 1.38 DC4K platforms. ICP Production release 3.1 is the minimum required release package for ICP hardware version 1.5 with the new GreenLiant disk chip, but may be used on ICP hardware version 1.0, with the SanDisk, as well. The ICP hardware type can be read with the system configuration command and can be seen on the “SysConfig” tab of the ICP and Enigma Control Program version 1.00(111) which is included with this release. An ICP hardware version 1.5 board will return value 0x42, and will report as “Series2 1.5 (DC4K Ready)” in the ICP Board Type field of the control program. Successful installation of ICP Production release 3.1 for use on a DC4K projector requires that the ICP board be equipped with the larger FMT flash. The presence of a larger FMT flash can be determined from the current ICP and Enigma Control Program Version 1.00(111). On the “Sys-Config” tab, in the lower left, the ICP Board Type will indicate “(DC4K Ready)” if the proper flash part is installed.

ICP hardware version 1.5 requires a minimum ICP release 3.1 and will be prevented from downgrading to ICP Prod3.0 or lower automatically. ICP hardware version 1.0 boards, can be downgraded to ICP Prod3.0 if desired, but TI does not recommend downgrading ANY ICP below Prod3.0 as Prod3.0 has corrections to prevent corruption of the disk chip included.

ICP Production release 3.1 corrects the problems, adds capabilities, and has the known issues identified below.

**Problem Identified and Corrected:**

- 1) Issues found with support for SMPTE subtitles, in particular the “FOX killer reel”. Most issues found have been addressed. Some tests in the FOX reel still fail, but we believe this is a test issue, not a problem with the implementation of SMPTE subtitles within the TI electronics.
- 2) Various bypass states corrected when entering/leaving test patterns
- 3) Fixed problem with changing frequencies above/below 30Hz for DC4K test patterns.
- 4) Fixed problem with centering sub-images on DC4K when frequency is greater than 30Hz and line-double mode is active.
- 5) Fixed problem with CSC-P7 white point tolerance box where point was not maintained inside box.
- 6) Fixed issue with sequence file not being updated correctly when installing in FMT boot mode.
- 7) Fixed issue with image disturbance at high temperatures.
- 8) Fixed issue with shadow size for font inside <text> element for subtitles.

**New Capabilities:**

- 1) Support for new ICP hardware version 1.5, with GreenLiant disk on chip. ICP hardware version 1.5 is identified as board type 0x42 from the system configuration command.
- 2) New file in release package, BoardCompatibility.xml, will prevent downgrade of ICP hardware version 1.5 to ICP production releases less than 3.1.
- 3) New Spatial Color Calibration command added. See separate description of this command in the file SpatialColorCalibration.pdf which is included in this release.
- 4) New STM (contour mitigation) algorithm implemented for DC4K.

**Known Issues:**

- 1) Cropping does not work as expected on DC4K when the input frequency is greater than 30Hz. This is due to the line-double that is performed at the satellite, and the ICP resize/crop functions not comprehending this fact. This will be addressed in a future release
- 2) On DC4K internal test patterns have stability issues between the transition points of 30.1Hz and 30.5Hz. The test pattern may not display correctly between these frequencies. Test patterns below 30Hz are drawn to fill the display 4096x2160 and work correctly. Test patterns at 31Hz and above, are drawn at half height, 4096x1080 and the satellite line doubles the pattern, and work correctly.
- 3) Transitions from an invalid input (screen blanked) to a valid input (screen unblanked) may occasionally fail to automatically unblank the screen. This has been seen on all platforms, but typically is seen less than 10% of the time. Sending any command that causes autotiming to run, such as the scalar bypass command corrects the issue and the image is unblanked. This will be addressed in a future release.

- 4) Using the system reset command to force entire system into boot mode will leave the FMT in main mode instead of boot mode. The FMT is originally forced to boot mode, but the ICP software in boot mode fails the signature test, and resets the FMT which returns it to main mode. This will be addressed in a future release. In the meantime, the system reset command can be sent again to force just the FMT into boot mode if desired.