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Sony IP&S Inc.

No. HDCM17-089-TN

# Technical News

Issued : February 1, 2018

**Subject: Software Release [AT Software: V3.30]**

[Applicable Model ]

Model / Destination	Serial Number	Number of Unit
HDCU1700 CED		
HDCU1700 SY3		
HDCU1700 SYL		
HDCU2000 CED		
HDCU2000 E2		
HDCU2000 E3		
HDCU2000 J2		
HDCU2000 UC5		
HDCU2080 CNB		
HDCU2500 CED		
HDCU2500 SY3		
HDCU2500 SYL		
HDCU2580 CNB		
HKCU2007 SY		
HKCU2040 SY		

**[Description]**

The software with additional functions and corrected errors for the HDCU2000 series (V3.30) is released. Upgrade it as necessary.

12G-SDI output is added to the HDCU2000 series which the HKCU2040 (4K/HDR PROCESSOR BOARD option) is installed.

Upgrade the firmware and PLD on each board of the CCU by referring to the procedure below as necessary. Additionally, upgrade the connecting camera, control panel, and BPU by referring to the related technical news.

- HDCM17-085: RCP-1500/1501/1530
- HDCM17-086: MSU-1000/1500
- HDCM17-088: HDC2000 Series
- HDCM17-077: BPU4000
- HDCM17-078: BPU4500
- HDCM17-006: HDCU1700/2000/2500/HKCU2040
- HDCM18-001: HKCU2040

**[Change Point]**

<New function>

1. 12G-SDI output is supported when the HKCU2040 is installed.  
12G-SDI output is added to the output setting of 4K/59.94P, 50P of HDCU2000 series which the HKCU2040 (4K/HDR PROCESSOR BOARD option) is installed.
2. Status indication of 12G-SDI output is added.  
The status of the 12G-SDI output of each terminal on the DIF board is indicated when the HKCU2040 is installed.
3. White Clip function in HDR is added.

<Error Correction>

1. There might be a case where the reference signal is indicated as 1080/60i erroneously when the 1080/50i (3-value SYNC) signal is supplied as the reference signal of the multiple camera control units connected in a row. This error is corrected.

**[Preparation]**

<Software file>

Version upgrade of the software and PLD is necessary.

File name	Upgrade target	Version
hdcu2000.rom	Software	V3.30
E_000_001_93_26	PLD (AT-167)	V4.13

\* Please contact to your local Sony's service office for obtaining the above files.

\* PLD upgrade software tool

DLT_v35.exe	Software tool for PLD version upgrade
DLT30_install.pdf DLT_v35	Installation Guide (Japanese)
DLT30_install_E.pdf DLT_v35	Installation Guide (English)

Refer to HDCM12-041 for obtaining these files.

## &lt;Memory stick&gt;

The software version upgrade is executed using a memory stick. Prepare either one of the following memory sticks.

The memory stick that has already been used for other applications can also be used if it has blank capacity of 2 MB or more.

- MSA-8AN (8MB)
- MSA-16AN (16MB)
- MSA-32AN (32MB)
- MSA-64AN (64MB)

Create the following directory in a memory stick, and copy hdcu2000.rom.

Enter the directory name with upper-case letters.

Because of the display on Microsoft Windows system, be careful that only the top character is displayed in upper case, and the remaining characters are displayed in lower case.

\MSSONY\PRO\CAMERA\HDCU2000 (Enter all in upper case)

## &lt;PLD upgrade tool&gt;

- Personal computer
  - OS: Windows 2000/XP, with USB port
  - With the above version upgrade software tool installed
- PLD download tool (cable) Part. No J-7120-220-A
- Altera USB BLASTER

**[Installation Procedure]**

## &lt; Software &gt;

1. Turn off the power of HDCU2000/2500/2080/2580/1700.
2. Insert the memory stick in which the version upgrade data is copied in the specified directory, into the memory stick connector of the AT-167 board.
3. Set the switch S401 (the switch located on the top) at the end of the AT-167 board to the "SD" position.
4. Set the switch S402 (the switch located on the bottom) at the end of the AT-167 board to the "ADV" position.
5. When the Memory Access LED has changed from the red to green light, release your hand from switch S402.
6. After the green LED of the MAIN-POWER of HDCU2000/HDCU2500/2080/2580/1700 keeps blinking for about 15 seconds, it turns on.
7. Return the switch S401 position from "SD" position to the original position.
8. Turn off the power once and turn it back on. The system will boot up with the new software.

## &lt;PLD&gt;

Write the data to the PLD of each board according to section 1-13 in the Service Manual.

## [Confirmation/Adjustment]

<Confirming the software version>

Check the ROM version at the CHARACTER output or the MONITOR output.

*ROM Version*		
CHU		
CCU	HDCU2000	
	3.30	17.12.18

<Confirming the PLD version>

Check each of the PLD version name with the CHARACTER output or the MONITOR output.

Versions in this Technical News

Firmware		V3.30 (To be changed)
PLD	AT-167	V4.13 (To be changed)
	AVP-15	V1.11
	SDP-17	V3.04
	DTX-9	V2.41
	DRX-9	V3.05
	RC-105	V2.30
	DPR-378	V1.15/V1.15

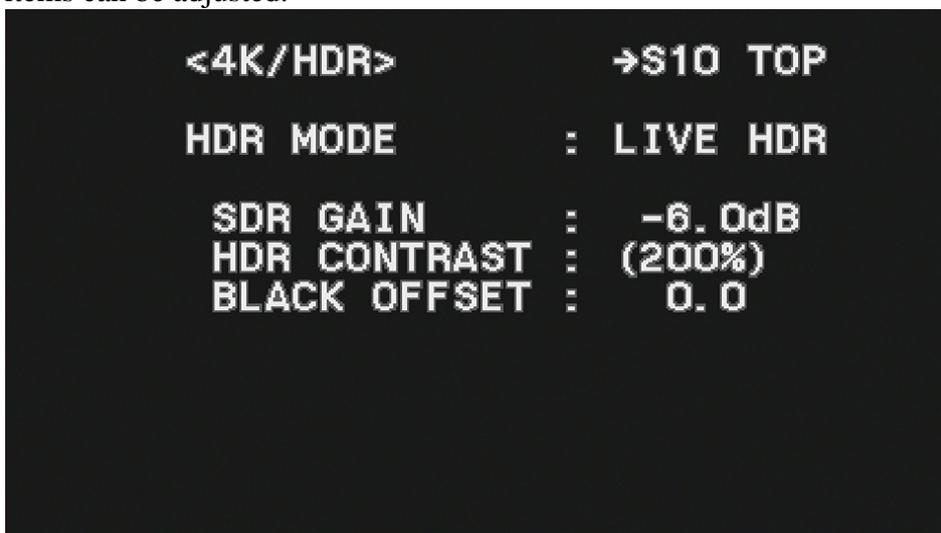
## [How to Use the HDR Function]

- Mount HKCU2040 on the CCU.  
Mount HKCU2040 to the CCU that outputs 4K or HDR.  
Also, upgrade the version of the camera and the control panel by referring to the [Description].
- Set the camera to 4K/HDR MODE.  
With MAINTENANCE / CAM MODE in the camera menu, set to “4K/HDR MODE” to change the mode to transmit 4K/HDR from the camera.  
This makes it possible to select 1080P (4K/HDR) from CAMERA TRASMIT on the panel.  
However, if the camera is set to “4K/HDR MODE”, the main line picture or the down-converted SD picture will not be output from the camera. Therefore, if the main line picture or the down-converted SD picture is necessary, set CAM MODE back to NORMAL.
- Set CAMERA TRASMIT on the panel to 1080P (4K/HDR).  
By setting CAMERA TRASMIT to 1080P (4K/HDR), the 4K output format can be selected from the slot where HKCU2040 is mounted.
  - \* In the case of 4K 1 output setting, 4K signal is output from slot 1 by HDCU2000, and from slot 2 by HDCU2500/1700.
  - \* In the case of 4K 2 output setting, 4K signal is output from slot 1 & 2 by HDCU2000, and from slot 2 & 3 by HDCU2500.
- Set the CCU to LIVE-HDR MODE.  
With SYSTEM OPERATION / 4K/HDR in the CCU menu, change HDR MODE to LIVE HDR.  
This makes it possible to change the setting of OETF for each slot.  
In addition, HDR-related adjustment items (SDR GAIN and BLACK OFFSET) become effective.

**[Explanation of HDR Function]**

HKCU2040 LIVE-HDR is supported.

1. By setting HDR MODE to LIVE HDR in CCU MENU S10<4K/HDR>, HDR-related adjustment items can be adjusted.



HDR MODE: Sets the HDR mode.

OFF: Outputs normal SDR video.

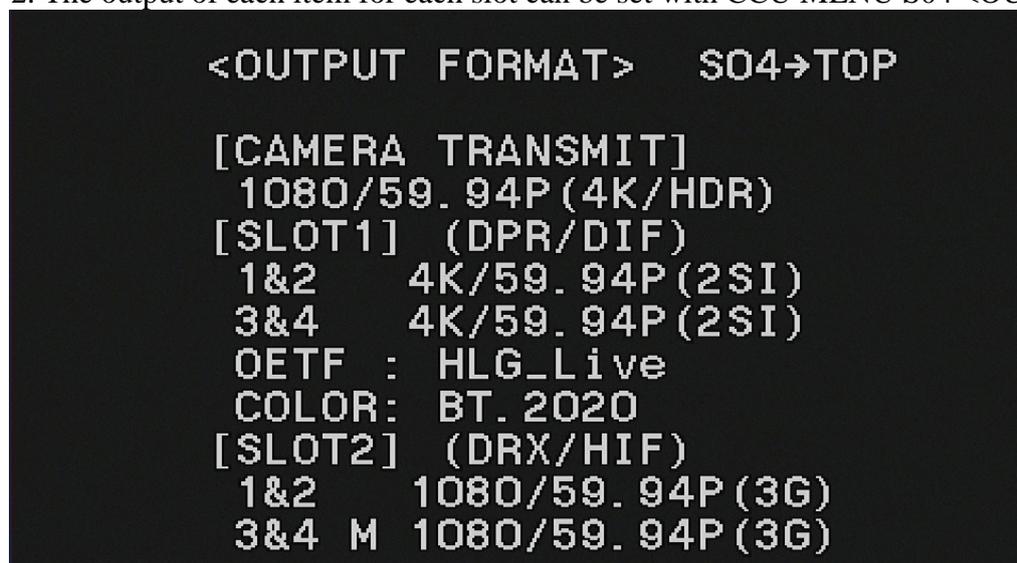
LIVE HDR: Expands the imaging dynamic range on the camera side, and outputs the adjusted HDR video.

SDR GAIN: Sets the gain for the SDR output (valid only for LIVE HDR).

HDR CONTRAST: Displays the contrast of the HDR output secured by setting SDR GAIN (valid only for LIVE HDR).

BLACK OFFSET: Black offset for the HDR output (valid only for LIVE HDR).

2. The output of each item for each slot can be set with CCU MENU S04 <OUTPUT FORMAT>.



OETF: Sets OETF of the output signal (valid only when HDR MODE is LIVE HDR).

COLOR: Sets the color gamut of the output signal (valid only when HDR MODE is LIVE HDR).

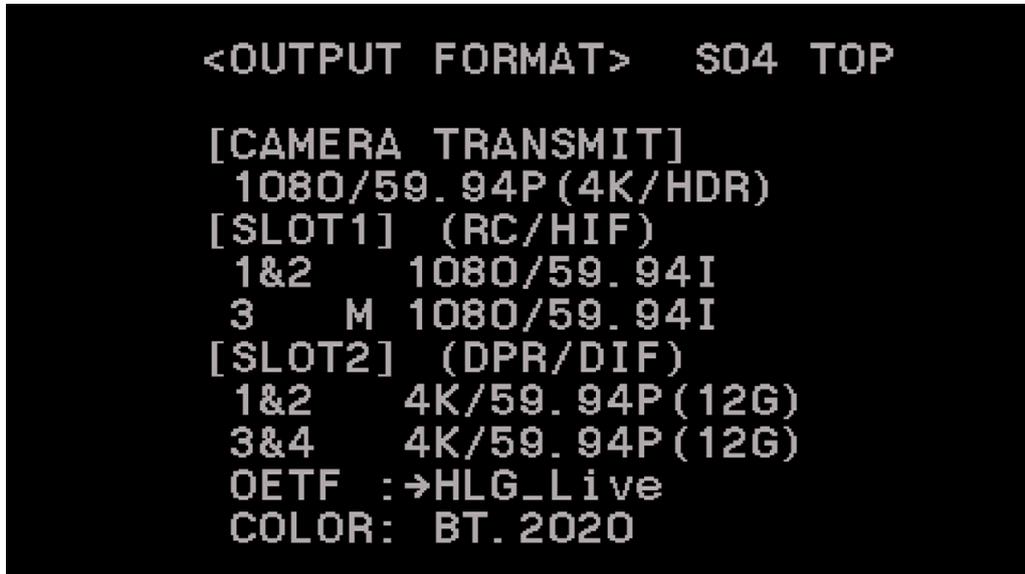
### [Setting of 12G-SDI Output]

1. Set "CAMERA TRANSMIT" to "1080P(4K/HDR)".

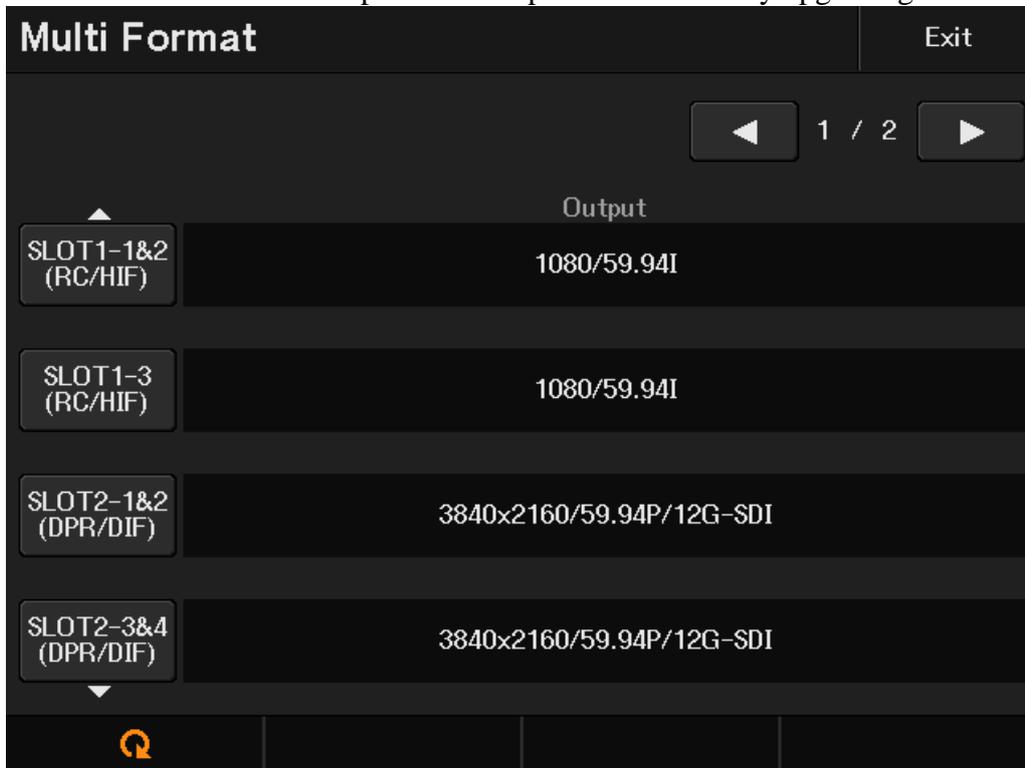
The selection of 12G-SDI output is enabled with the slot which the HKCU2040 is installed by setting CAMERA TRANSMIT to 1080P(4K/HDR).

\*Signal is output from slot 1 for HDCU2000 and slot 2 for HDCU2500/1700.

2. Select the output in CCU MENU S04 <OUTPUT FORMAT>.



3. The selection of the output from the panel is enabled by upgrading.



**[Explanation of Status Indication of 12G-SDI Output]**

The indication of the output status of 12G-SDI is added to the dialog page for the slot which HKCU2040 is installed.

Either of "OK" or "ERR" would be indicated depending on the output status of the driver at the final stage.

\*Signal is output from slot 1 for HDCU2000 and slot 2 for HDCU2500/1700.

```
*Slot1 Diag*           12/20

1&2: 4K/59.94P(12G)
3&4: 4K/59.94P(12G)
HD CB:SDI CHECK FIELD
SDI Out  1    2    3    4
  Status: OK  OK  OK  OK
Front:DPR           Power:OK

PLD Version:1.15  Done
              1.15
Rear :DIF           Power:OK
```