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Sony Corporation

No. HDCM17-024R-TN

Technical News

Issued : April 17, 2017

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Subject: Software Release [AT Software: V3.10]

[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		
HDCU2500 CED		
HDCU2500 SY3		
HDCU2500 SYL		
HKCU2007 SY		
HKCU2040 SY		

(Rev.1) Add the BPU4000/4500 to the related information. The version information of SDP-PLD is updated.

[Description]

The software with additional functions and corrected errors for the HDCU2000 series is released. (V3.10)

Upgrade the software as necessary.

The LIVE-HDR function is added to the HDCU2000 series equipped with HKCU2040 (4K/HDR PROCESSOR BOARD option). It also supports mounting of HKCU-2040 to HDCU-1700, 4K and HD720P simultaneous output, etc.

Follow the procedure below to upgrade the version of the CCU firmware and that of the PLD of each board.

Upgrade the camera / control panel / BPU to be connected by referring to the Technical News below. (Rev.1)

When connecting the BPU4000/4500 which are not upgraded and CCU equipped with HKCU2040, the malfunction that output format of BPU is unintentionally changed occurs at changing the format of CCU.

Upgrade BPU4000 to V3.41 or higher, and also upgrade BPU4500 to V1.41 or higher. (Rev.1)

- HDCM17-021 (RCP-1500/1501/1530)
- HDCM17-022 (MSU-1000/1500)
- HDCM17-023 (HDC2000 Series)
- HDCM17-006 (Upgrading procedure for the DPR-378 board)
- HDCM17-034 (BPU4000) (Rev.1)
- HDCM17-035 (BPU4500) (Rev.1)

[Change Point]

<New function>

1. HKCU2040 LIVE-HDR is supported (HDCU2000/2500/1700 only)
 - By installing HKCU2040 (4K/HDR PROCESSOR BOARD option) to the HDCU2000 series, HDR output of 4K/59.94P, 50P and 1080/59.94P, 50P will be added.
 - The 4K/HDR mode is added to the transfer mode between the camera and CCU.
 - LIVE-HDR MODE can be selected.
 - SDR GAIN and HDR BLACK OFFSET can be adjusted.
 - Gamma, Knee, and Detail can be adjusted for 4K/HD individually.
2. Mounting of HKCU2040 on HDCU1700 is supported.
 - 4K output format 2SI/SQD can be selected.
 - BT.709/2020 can be switched.

[Restrictions]

- Only one output will be available for the 4K output.
 - No output is output from slot 1 as in the standard configuration.
3. The 4K output and the simultaneous 720p down-conversion output are supported.
 - By setting S03 <MULTI FORMAT> CCU VIDEO CONVERT to ENB, the 4K output and the simultaneous 720p down conversion output can be set.
 4. 4K 2SI diamond mark display function

4. Set the switch S402 (the switch located on the bottom) at the end of the AT-167 board to the “ADV” position. While keeping their respective positions with hands, turn on the power of HDCU1000/HDCU1500/HDCU1080.
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.

<PLD>

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

- Caution

- *1 The PLD internal data on the SDP-17 board is written or rewritten via the CN3/AVP-15 board. Rewrite the data with the e-Production tool with switch S1-8 on the AVP-15 board turned on. After it is rewritten, return switch S1-8 on the AVP-15 board to off.

[Confirmation/Adjustment]

<Confirming the software version>

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

ROM Version		
CHU		
CCU	HDCU2000	
	3.10	17.03.29

<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	V3.10 (To be changed)
PLD AT-167	V4.12
AVP-15	V1.11
SDP-17	V3.01 V3.02 (HDCM17-042) (Rev.1)
DTX-9	V2.41
DRX-9	V3.05 (To be changed)
RC-105	V2.30
DPR-378	V1.13/V1.13 (To be changed)

[How to Use the HDR Function]

1. 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 related Technical News.
2. 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.

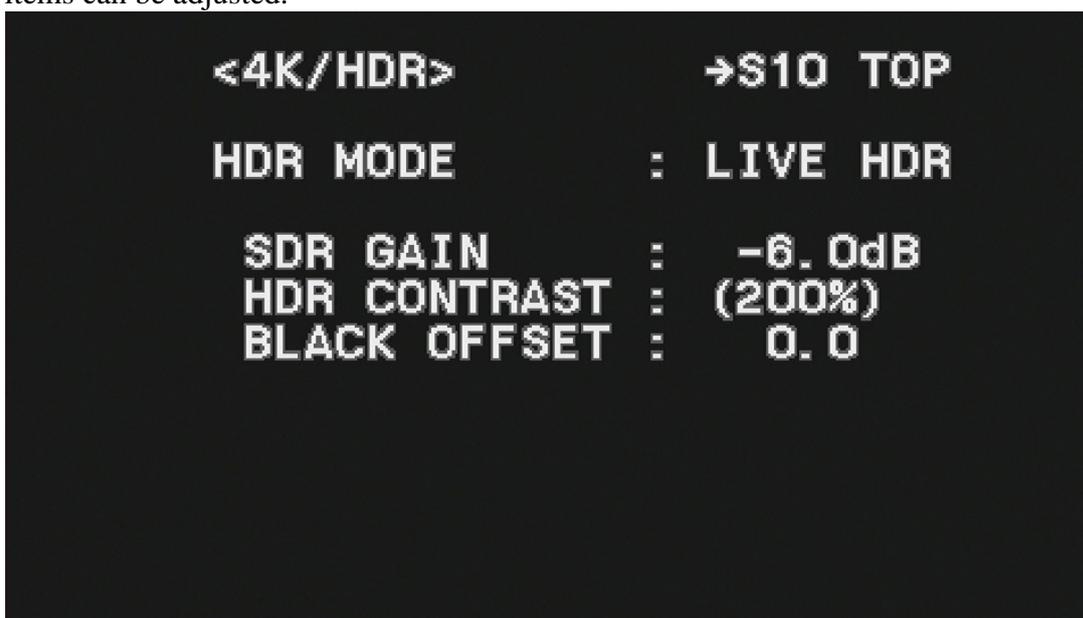
This makes it possible to select 1080P (4K/HDR) from CAMERA TRASMIT on the panel. However, if the camera is set to “4K/HDR MODE”, the main line picture or the down-converted SD picture will not be output from the camera. Therefore, if the main line picture or the down-converted SD picture is necessary, set CAM MODE back to NORMAL.

3. 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.
4. 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 the 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.

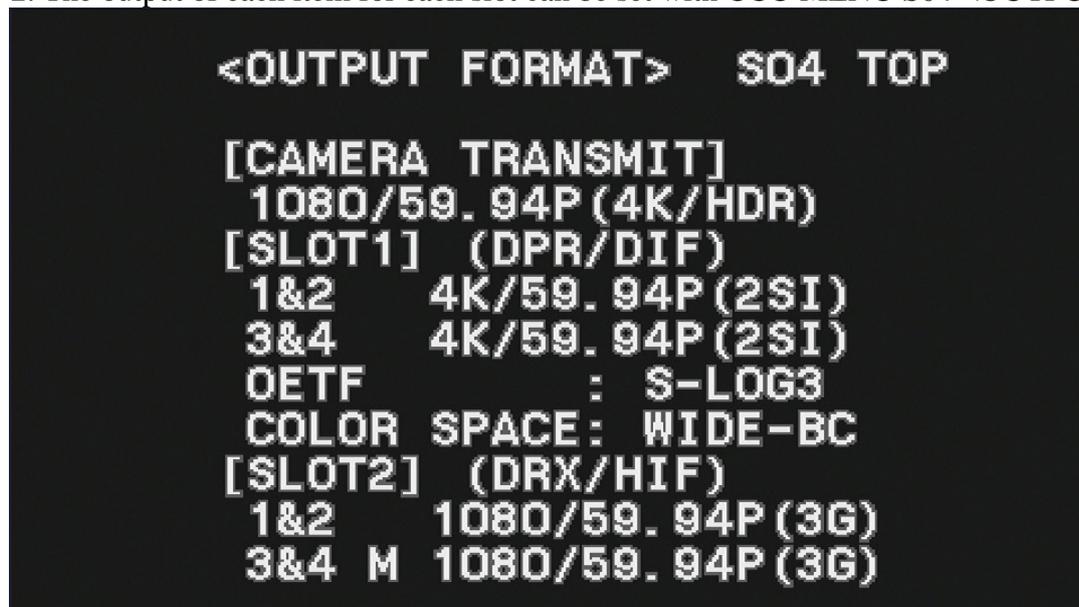
LIVE HDR: Expands the imaging dynamic range on the camera side, and outputs the adjusted HDR video.

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

[Explanation of the New Functions]

1. 4K 2SI diamond mark

This is a function that displays the test pattern as shown below in the lower right area of the 4K color bar when outputting 4K 2 Sample interleave.

If the connections of Link-1 to Link 4 are correct, the letters “OK” can be seen, but if the connections are incorrect. “OK” cannot be seen. It can be used as a guide to confirm the connection.

By setting 2SI DIA MARKER to ON in CCU MENU C01<COLOR BAR>, the 4K 2SI diamond mark is displayed superimposed on the color bar when 4K 2 Sample interleave is output.

