

TECHNICAL BULLETIN

Ikegami

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Date: 7/15/10
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To: Distribution

Product: HDK-79EC, CCU-890, TA-79HD

Symptom: 24p Issues – Revised from bulletin dated 6/2/10

Purpose:

- 1) Reinforce instructions for genlock when operating the HDK-79EC in 1080/24p, 1080/24sf, or 1080/60i with 2-3 pulldown.
- 2) Correct problem with CCU-890 not accepting SMPTE 318 compliant blackburst with 10 field identification (BB + 10 Field ID).
- 3) Correct intermittent problem with camera head to CCU phase lock in 1080p23.98sf and 1080p23.98 formats, and triax configuration.

Instruction:

- 1) When operating the HDK-79EC in any of the 24p formats it is very important to provide the CCU-890 with a 10 field ID reference signal for frame accuracy. Please see the attached revised diagrams showing the different genlock wiring configurations which are recommended.

Please confirm proper genlock via the diagnostic display on the PM outputs. The genlock status including 10 Field ID (when camera head is operating in 24p) is indicated on the diagnostics page.

- 2) CCU software must be version STR-5136V23.00 or higher, and FPGA data for CCU Pulse board must be STR-5075V08. Please contact Ikegami field engineering if software needs to be updated.

- 3) FPGA data for TA Modem module (in TA-79HD) must be STR-4623V02 for modules with printed circuit version PD38R9E or PE4616E. If printed circuit is version PE5433E with software STR-4861V00, no update is needed. Please contact Ikegami field engineering if software needs to be updated.

3.2 GENLOCK System

This section explains input/output connectors and connection examples of the GENLOCK system for this product.

Input Connectors

REF connectors and SYNC 10FLD connectors are explained here.

The phase of output signals can be synchronized with the reference signals input to the REF connectors and SYNC 10FLD connectors.

REF connectors

Three types of signals below can be input to the REF connectors.

- ① HDTV PS/S
- ② SDTV VBS/BBS
- ③ BBS + 10 FIELD ID

SYNC 10FLD connectors

When the output format is 1080I/59.94 (2-3 pulldown), 1080P/23.98, or 1080P/23.98 (segment frame), the phase of 23.98P and 2-3 pulldown signals can be synchronized by inputting the following signals.

- When the phase of 2-3 pulldown signal of another CCU-890 is synchronized by using a CCU-890 as master

HDTV tri-sync signals with 10 FIELD ID output from the SYNC OUT connector of another CCU-890

- When the phase of 23.98P and 2-3 pulldown signals is synchronized with the reference signals

Synchronization signals in 23.98P format

(When synchronization signals in 59.94I format are input to the REF connectors of the CCU, the synchronization signals in 23.98/P format must be in phase of the synchronization signals in 59.94I format.)

Output Connectors

SYNC OUT connector and ENC OUT connectors are explained here.

SYNC OUT connector

SYNC OUT connector outputs synchronization signals. The format to be selected varies depending on the output video signal. (Select a format from the menu.)

HD-SDI OUT1/OUT2 FORMAT	Synchronization Signal Format to be Selected
1080I59.	1080I59./SDTV
1080I59.PD	1080I59./1080P23.SF/1080P23./SDTV
1080P23.SF	
1080P23.	
720P59.	720P59./720P23./SDTV

In addition, when a format other than 1080I59. and 720P59. is selected, whether to add 2H pulse every 10 FIELD (this is different from the 10 FIELD ID specified by SMPTE 318M.; however, this is also called "10 FIELD ID" here.) can be selected.

ENC OUT connector

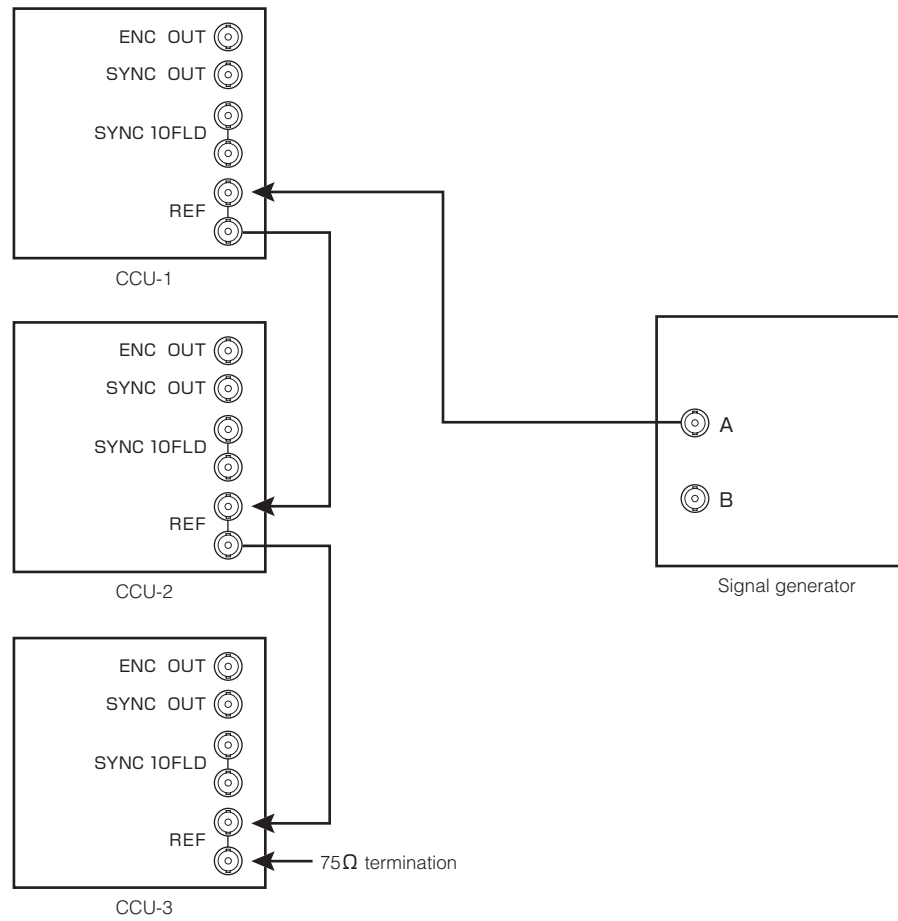
10 FIELD ID can be added to the ENC signal. (The 10 FIELD ID described here indicates the ID specified by SMPTE 318M.)

Note:

When the format of the camera head is 1080I/59.94 (2-3 pulldown), the phase of 2-3 pulldown signal needs to be synchronized even if the 2-3 pulldown signal is not used for the CCU output since the 2-3 pulldown signal is transmit and received between the camera head and the CCU.

■ Operating configurations

● When format conversion is not performed



Condition of signals output by the signal generator in this case

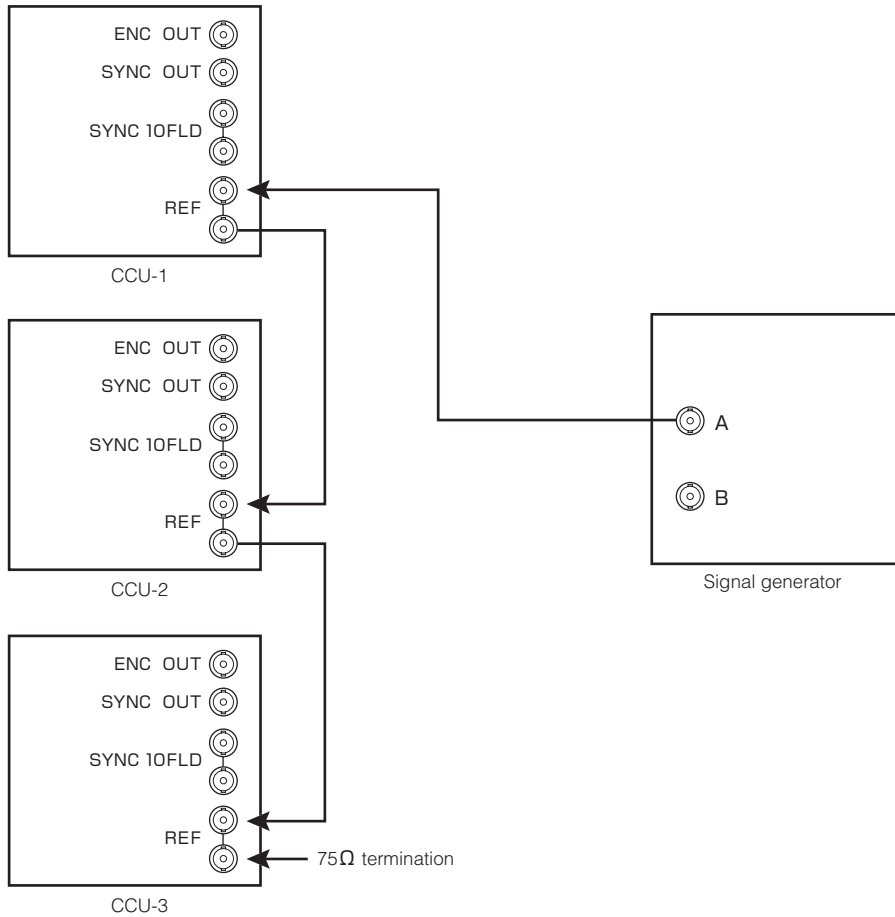
A: HDTV tri-sync signals whose format is the same as the camera head or NTSC BBS

● **When format conversion is performed**

The following four patterns use 1080I/59.94 or 1080P/23.98 as a format of the camera head.
 In addition, 1080P/23.98 is used as the output of the format conversion.

- **Pattern 1**

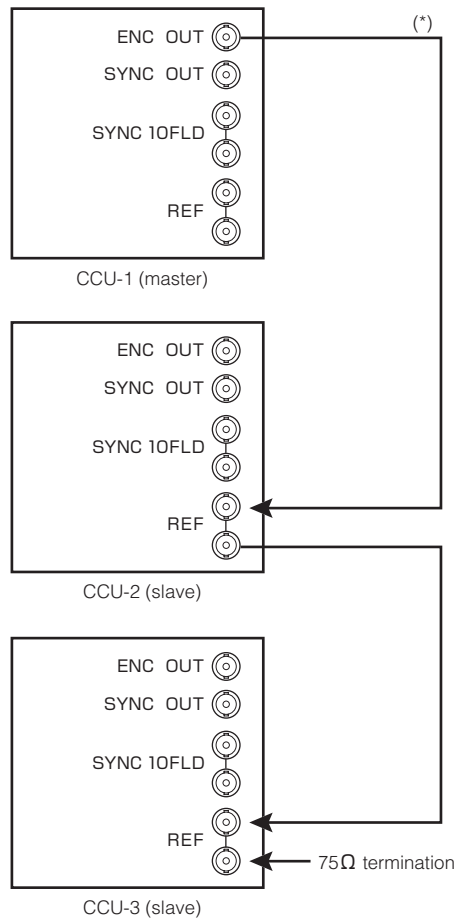
The case that NTSC BBS + 10 FIELD ID (SMPTE 318M-compliant) signals can be supplied from the signal generator



Condition of signals output by the signal generator in this case
 A: NTSC BBS + 10 FIELD ID (SMPTE 318M-compliant)

- Pattern 2

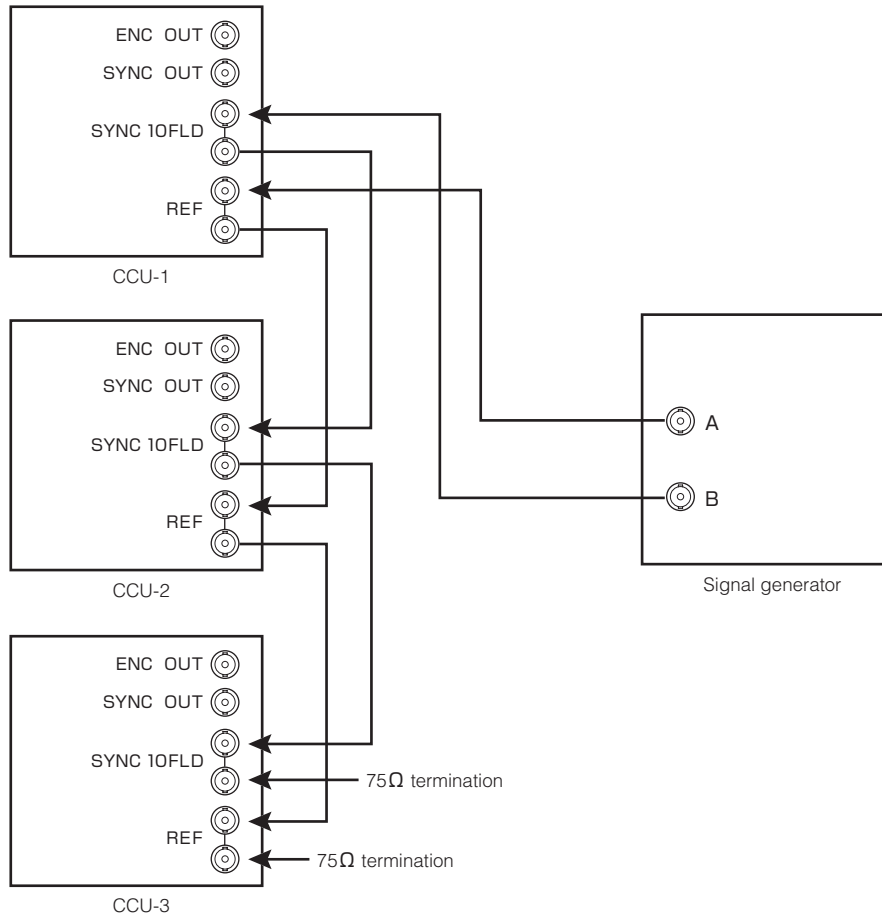
One of CCUs is placed as master when the signal generator is not used.



* In this case, add 10 FIELD ID signals (SMPTE 318M-compliant) to the ENC signal output. (Set the item "10 FIELD ID SIG" of the CCU menu "DOWN CONV CONT (1/3)" to ON.)

- Pattern 3

The case that synchronization signals of two types of formats can be supplied from the signal generator



Condition of signals output by the signal generator in this case

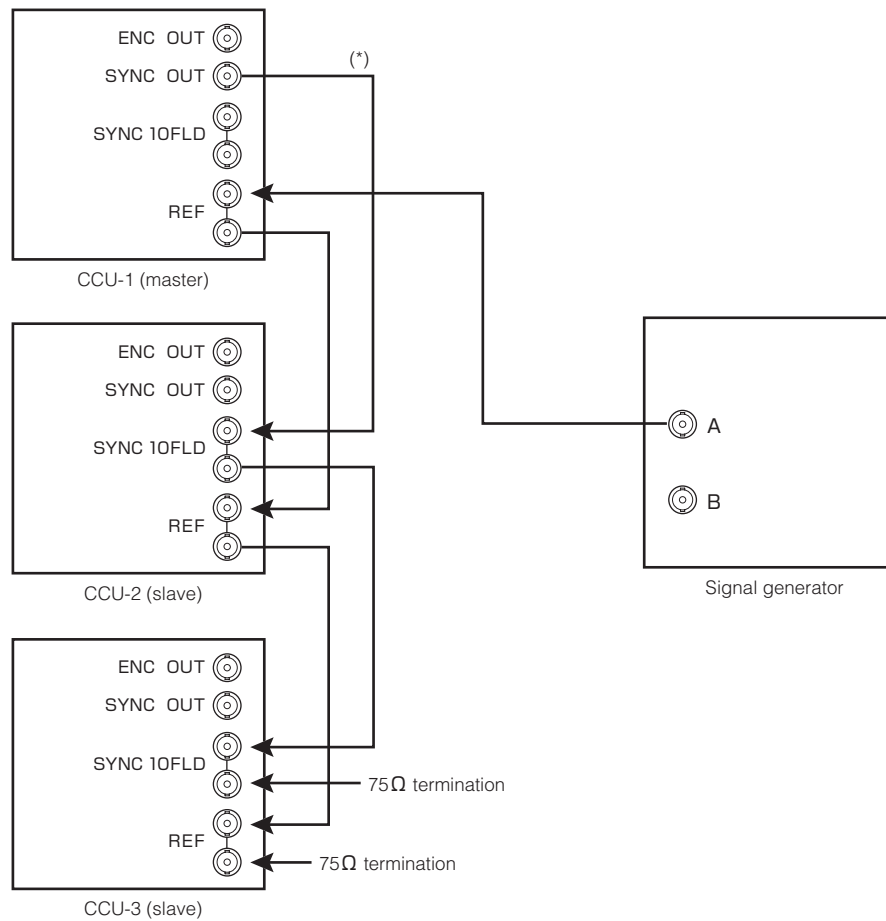
A: HDTV tri-sync signals of 1080I/59.94 format or NTSC BBS

B: HDTV tri-sync signals of 1080P/23.98 format

(However, the 10-field interval for 1080I/59.94 format needs to be synchronized with the 4-frame interval for 1080P/23.98 format.)

- Pattern 4

The case that only synchronization signals of one type of format can be supplied from the signal generator



Condition of signals output by the signal generator in this case

A: HDTV tri-sync signals of 1080I/59.94 format, HDTV tri-sync signals of 1080P/23.98 format, or NTSC BBS

- * In this case, add 10 FIELD ID signals to the signal output for external synchronization.
(Set the item "SYNC 2-3ID ADD" of the CCU menu "VIDEO OUT CONT" to ON.)