

Sony System Cameras

Connections of CCUs / Connector Details



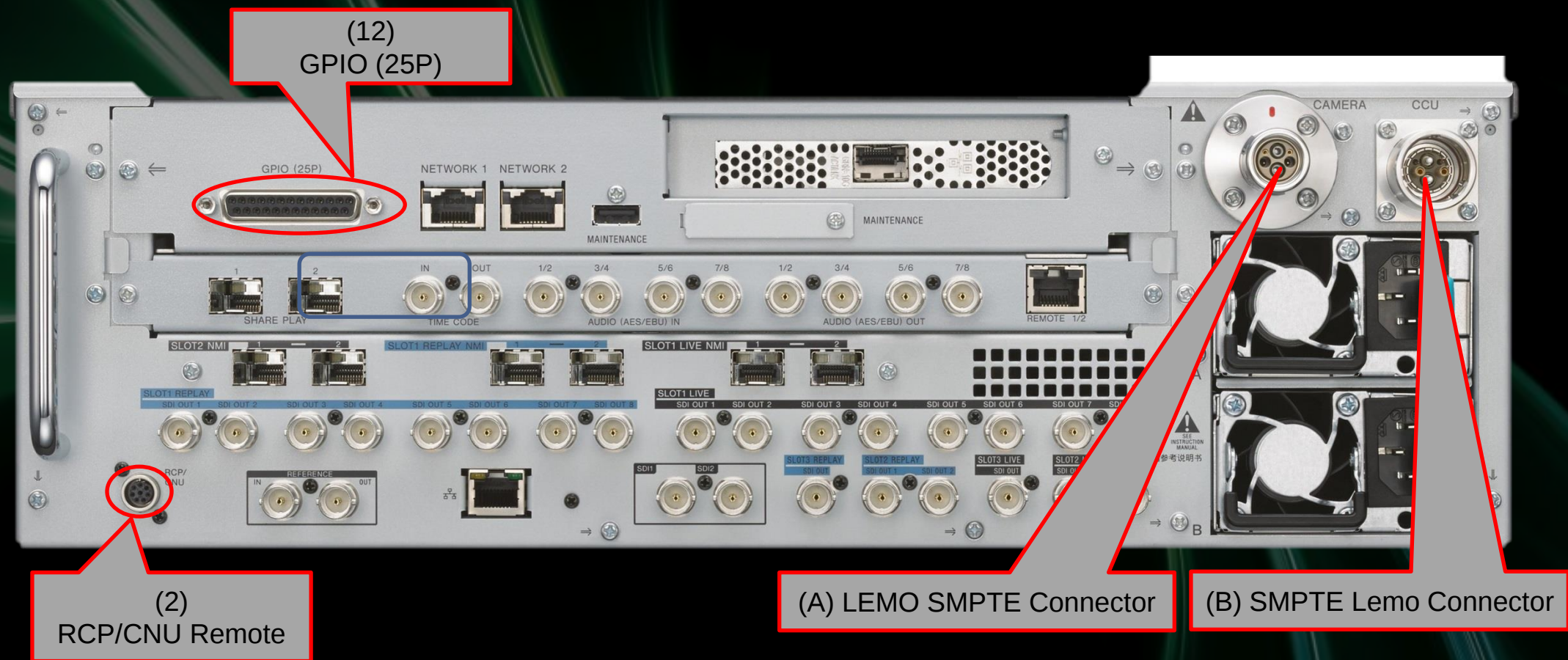
Gisbert Hochguertel
Sony PSE
Live Production Team

SONY

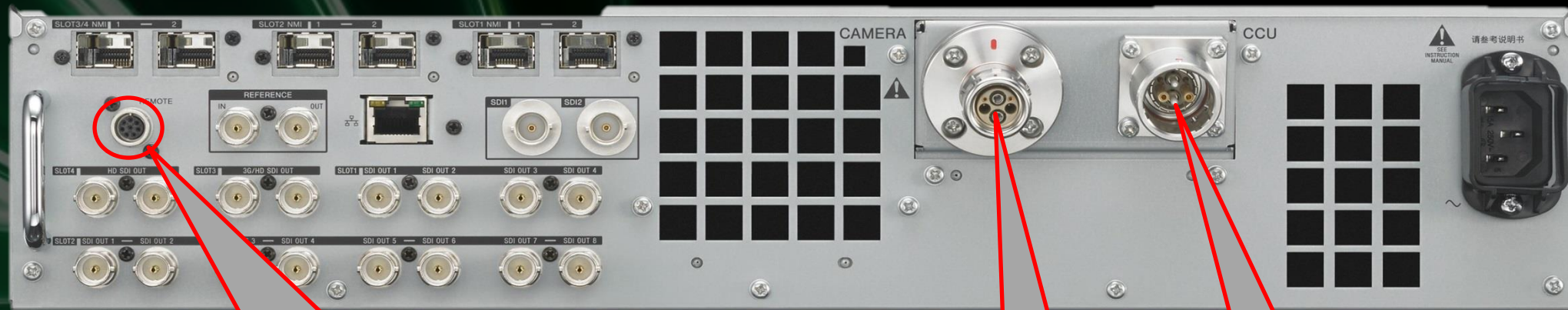
July 11th, 2018



BPU-4800



BPU-4500

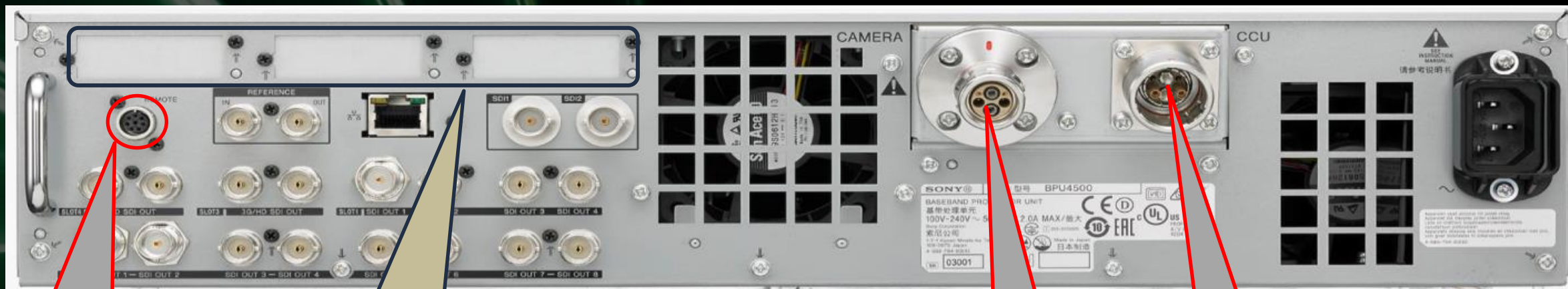


(2)
RCP Remote Connector

(A) LEMO SMPTE Connector

(B) SMPTE Lemo Connector

BPU-4500A



(2)
RCP Remote Connector

Optional Slots:
SKC-IP45AF (NMI / 10GB SFP+) or
SKC-4001 (ST2110 / 25GB SFP28)

(A) LEMO SMPTE Connector

(B) SMPTE Lemo Connector

BPU-4000



(2)
RCP Remote Connector

(A) LEMO SMPTE Connector

(B) SMPTE Lemo Connector

HDCU-4300

Optional Slot:
HKCU-IP43F (NMI) or
HKCU-4001 (ST2110) or
HKCU-4002 (12G SDI)

(2)
RCP/CNU Remote

(1)
INTERCOM/ TALLY/ PGM

(3)
TRUNK

(A) LEMO SMPTE Connector

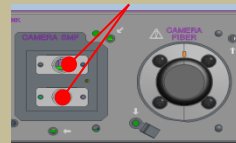
(1.1) Optional for HDCU-4300 (optional board CN-3847) / 50-pin Sub-D:
INTERCOM/TALLY/PGM/ MIC- REMOTE/WFREMOTE/ASPECT CONTROL/GPIO

HDCU-3100

Optional Slot:
HKCU-SFP30 (ST2110) or
HKCU-SDI30 (12G SDI)



Optional Slot:
HKCU-SMF30 (Single Mode Fiber)



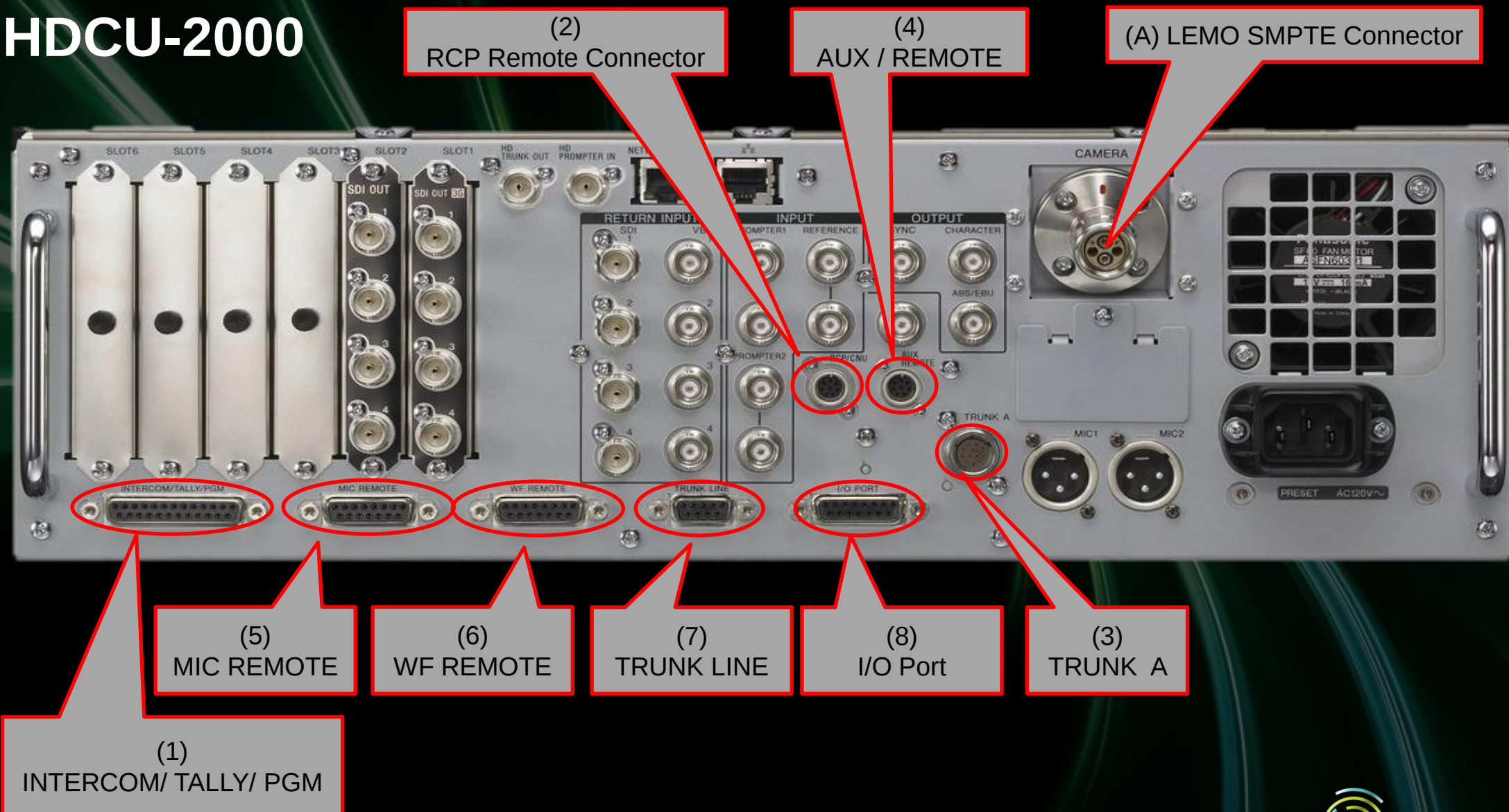
(1.1.)
INTERCOM/ TALLY/ PGM
/ MIC Remote/ WFM-
Remote

(2)
RCP Remote Connector

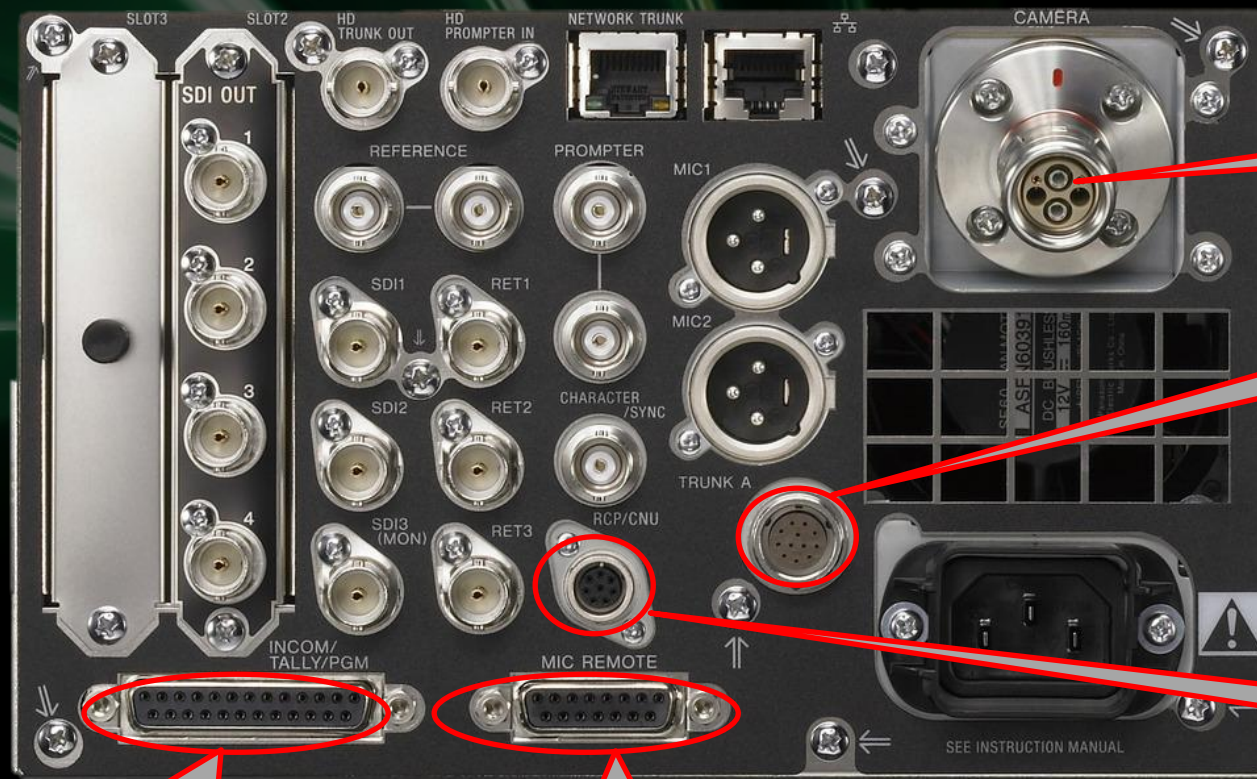
(3)
TRUNK

(A) LEMO SMPTE Connector

HDCU-2000



HDCU-2500



(A) LEMO SMPTE Connector

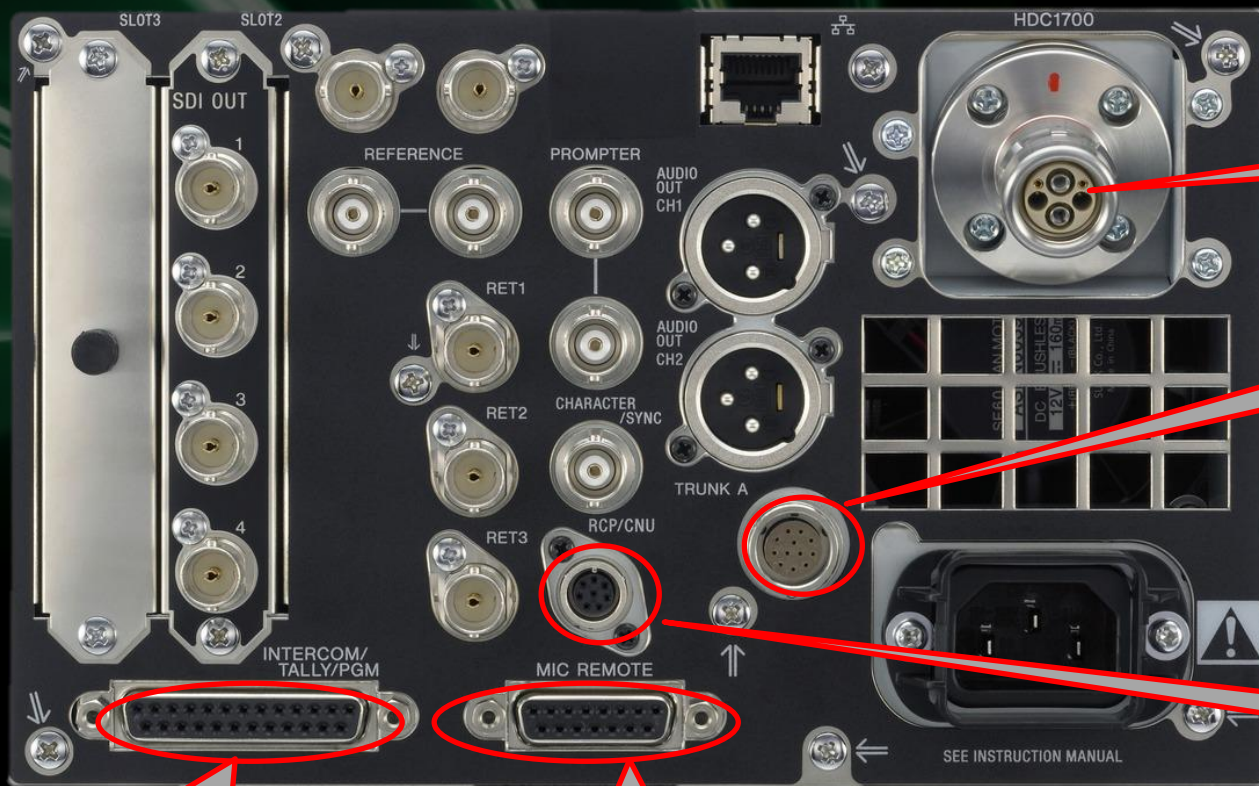
(3)
TRUNK A

(2)
RCP Remote Connector

(1)
INTERCOM/ TALLY/ PGM

(5)
MIC REMOTE

HDCU-1700



(A) LEMO SMPTE Connector

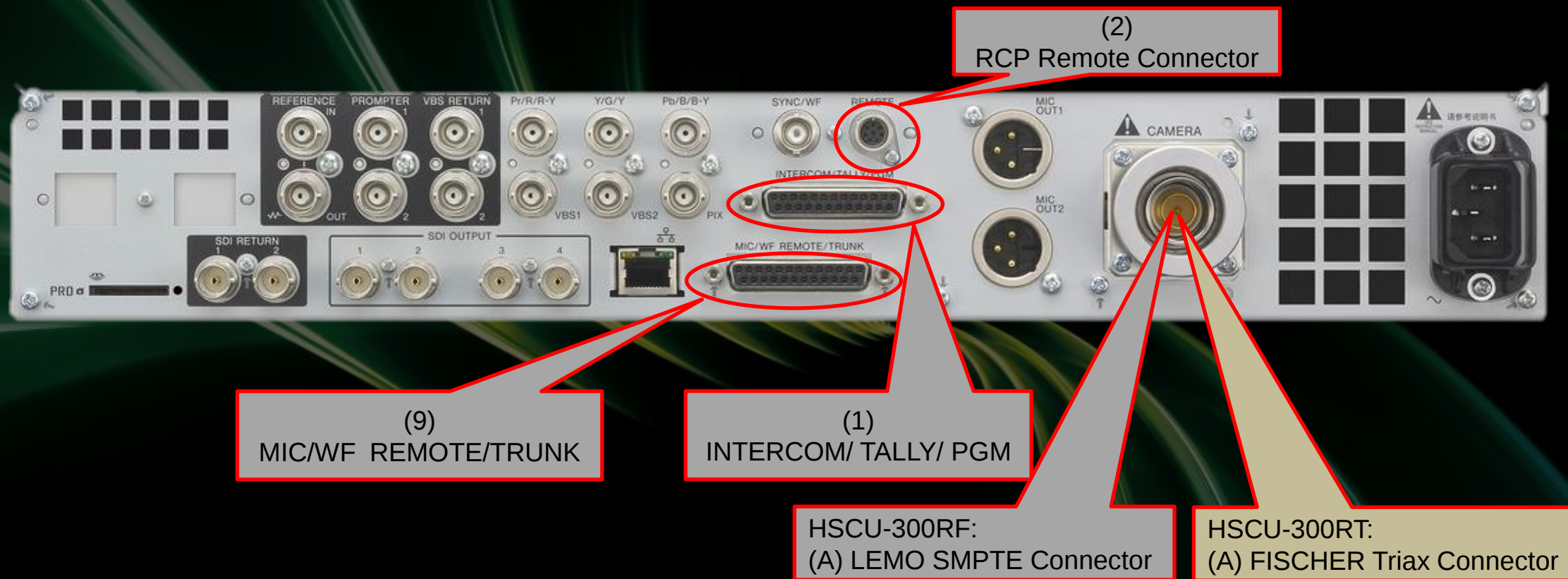
(3)
TRUNK A

(2)
RCP Remote Connector

(1)
INTERCOM/ TALLY/ PGM

(5)
MIC REMOTE

HSCU-300RF/-300RT



HXCU-FB80L



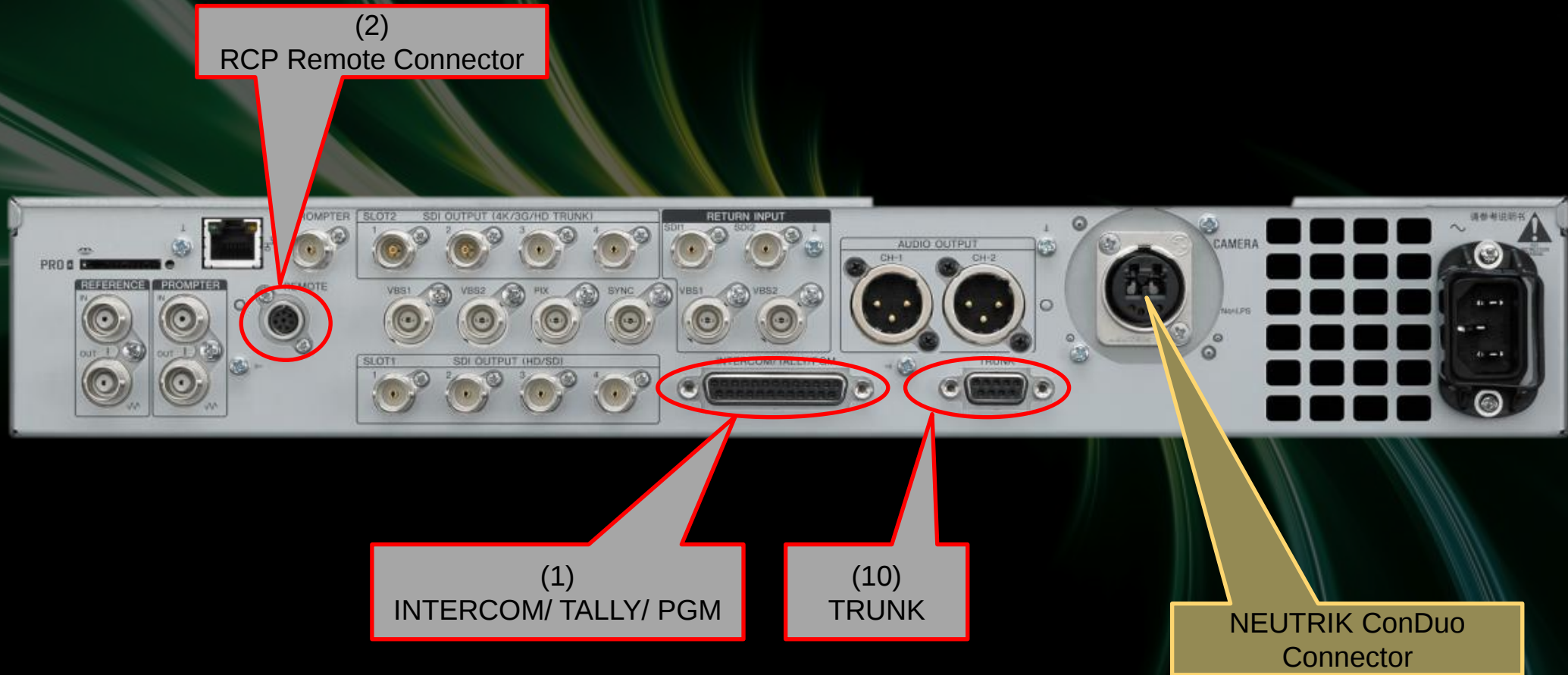
(2)
RCP Remote Connector

(1)
INTERCOM/ TALLY/ PGM

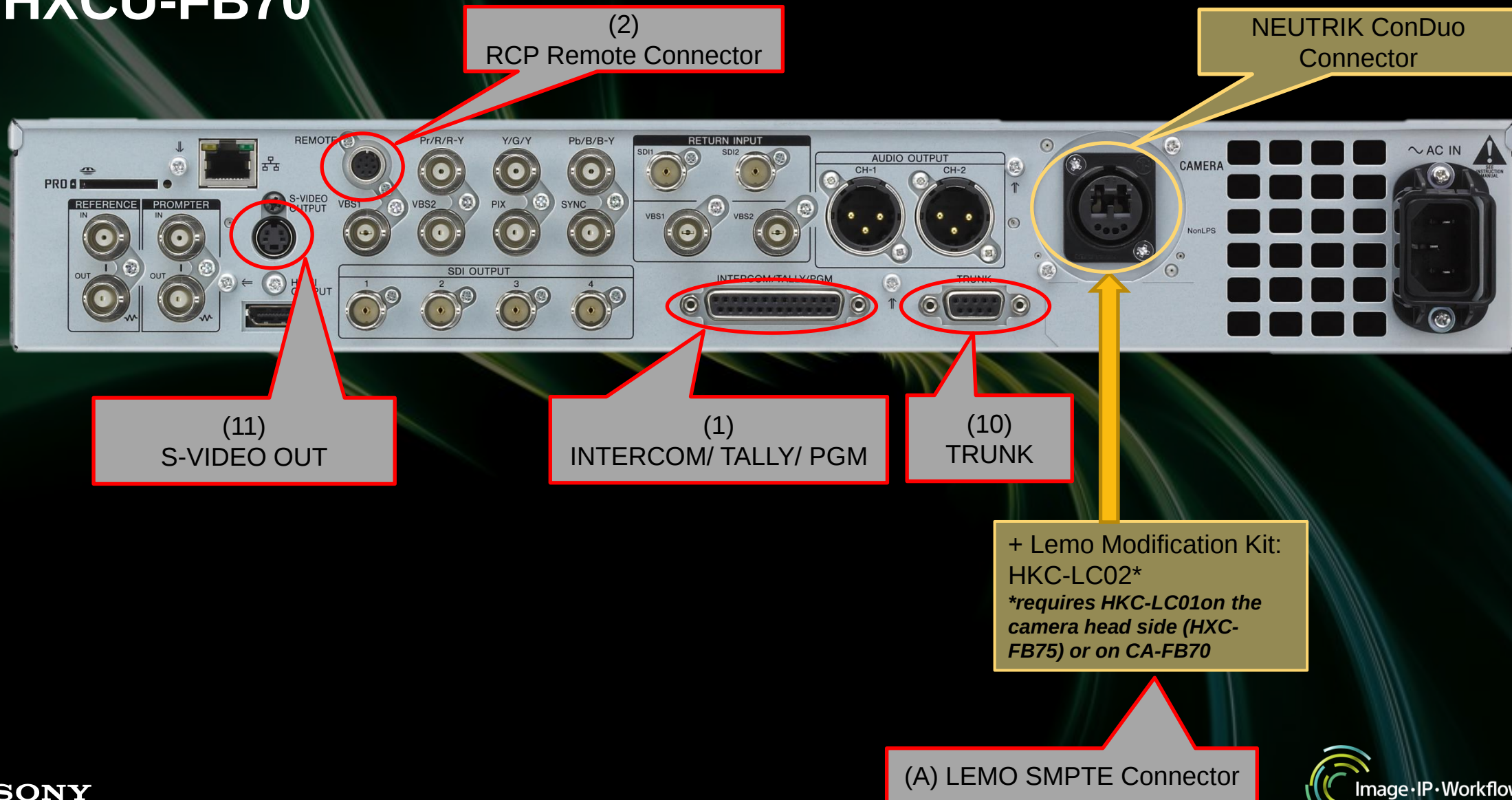
(10)
TRUNK

(A) LEMO SMPTE Connector

HXCU-FB80N (Neutrik ConDuo)



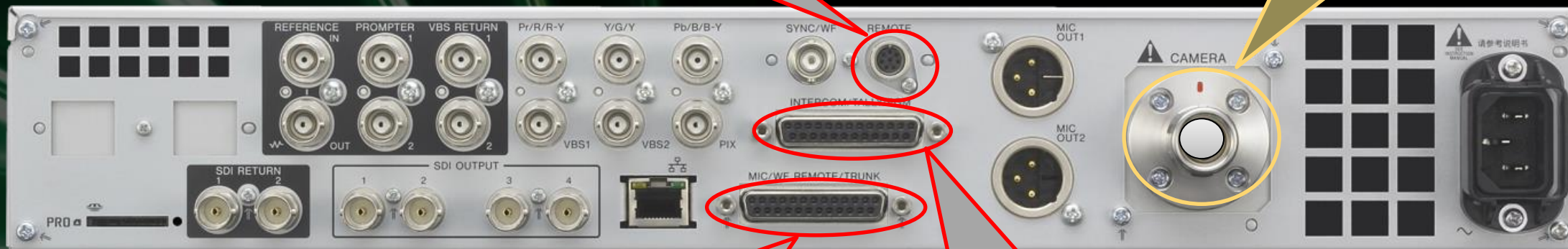
HXCU-FB70



HXCU-TX70

(2)
RCP Remote Connector

FISCHER Triax
Connector



(9)
MIC/WF REMOTE/TRUNK

(1)
INTERCOM/ TALLY/ PGM

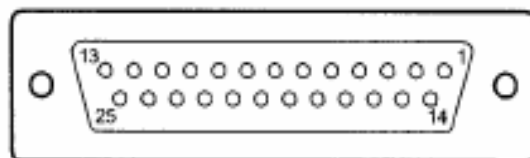
Connectors and Plugs

Pin Assignments of the connectors

No	Description	Connector	Cable Connector	Product
A	SMPTE LEMO Fiber Connector		FUW.3K.93C.TLMC96	All CCU and BPU-products
B	SMPTE Lemo Fiber Connector		PUW.3K.93C.TLCC96	BPU-4800/-4000/-4500
1	INTERCOM / TALLY / PGM	D-Sub 25-pin (F)	1-766-367-11 D-Sub 25-pin (Male) JAE DB-25PF-N equivalent	HDCU-4300/-2000/-2500/-1700 HSCU-300RT/-300RF HXCUC-FB70/-TX70
1.1.	INTERCOM/ TALLY/ PGM/ MIC-REMOTE/ WF-REMOTE/ ASPECT CONTROL/ GPIO	D-.Sub 50-pin (F)	1-566-358-11 D-SUB 50P, Male or JAE DDU-50PF-F0 equivalent	HDCU-3100 / HDCU-4300 + CN-3847 D-Sub 50pin (Option)
2	RCP/ REMOTE	8-pin (F)	1-766-848-11 Plug (8-pin Male)	BPU-4800/-4500/-4000 HDCU-4300/-2000/-2500/-1700 HSCU-300RT/-300RF HXCUC-FB70/-TX70
3	TRUNK A	12-pin (F)	1-819-261-11 (12-pin Male) or Tajimi PRC07-P12M	HDCU-4300/-2000/-2500/-1700
4	AUX / REMOTE	8-pin (F)	1-766-848-11 Plug, 8-pin (Male)	HDCU-2000
5	MIC REMOTE	D-Sub 15-pin (F)	1-506-582-11 D-Sub 15-pin (Male) or JAE DA-CI-J10 equivalent	HDCU-2000/-2500/-1700
6	WF REMOTE	D-Sub 15-pin (F)	1-506-582-11 D-Sub 15-pin (Male) or JAE DA-CI-J10 equivalent	HDCU-2000
7	TRUNK LINE	D-Sub 9-pin (F)	1-560-651-xx, D-Sub 9-pin (Male) or JAE DE-9PF-N equivalent	HDCU-2000
8	I/O PORT	D-Sub 15-pin (F)	1-506-582-11 D-Sub 15-pin (Male) or JAE DA-CI-J10 equivalent	HDCU-2000
9	MIC/WF REMOTE/TRUNK	D-Sub 25-pin (F)	1-766-367-11 D-Sub 25-pin (Male) JAE DB-25PF-N equivalent	HSCU-300RF/-300RT, HXCUC-TX70
10	TRUNK	D-Sub 9-pin (F)	1-568-182-11 D-Sub p-pin (Male)	HXCUC-FB70
11	S-VIDEO OUT	4-pin Female	Common product from Electronic Shop	HXCUC-FB70
12	GPIO (25P)	D-Sub 25-pin (F)	1-766-367-11 D-Sub 25-pin (Male) JAE DB-25PF-N equivalent	HDCU-4800

(1) INTERCOM / TALLY / PGM

INTERCOM/TALLY/PGM (D-sub 25P, Female)



– EXT VIEW –

(0 dBu = 0.775 Vrms)

No.	Signal	Specifications
1	ENG (R) (X) OUT	ENG SYSTEM RECEIVE
2	ENG (R) (Y) OUT	0 dBu BALANCED
3	ENG (G)	GND for ENG
4	ENG (T) (X) IN	ENG SYSTEM TALK
5	ENG (T) (Y) IN	0 dBu BALANCED
6	PGM1 (X) IN	–20 dBu/0 dBu
7	PGM1 (Y) IN	(Selectable with
8	PGM1 (G) IN	S301/AT board)
9	GND	GND for AUX

10	AUX3	
11	R TALLY (X) IN	ON : 24 Vdc, TTL (H), SHORT
12	R TALLY (Y) IN	OFF : 0 Vdc, TTL (L), OPEN
13	GND	CHASSIS GND
14	PROD (R) (X) OUT	PROD SYSTEM
15	PROD (R) (Y) OUT	RECEIVE 0 dBu BALANCED
16	PROD (G)	GND for PROD
17	PROD (T) (X) IN	PROD SYSTEM TALK
18	PROD (T) (Y) IN	0 dBu BALANCED
19	PGM2 (X) IN	–20 dBu/0 dBu
20	PGM2 (Y) IN	(Selectable with
21	PGM2 (G) IN	S302/AT board)
22	AUX4	
23	AUX5	
24	G TALLY (X) IN	ON : 24 Vdc, TTL (H), SHORT
25	G TALLY (Y) IN	OFF : 0 Vdc, TTL (L), OPEN

Products:

HDCU-4300/-2000/-2500/-1700

HDCU-1000/-1500

HSCU-300RT/-300RF

HXCU-FB70/-TX70

(1.1.) INTERCOM / TALLY / PGM / MIC Remote/ WFM Remote / ASPECT CONTROL / GPIO [A]

Products:

- Option for HDCU-4300 (CN-3847)
- HDCU-3100 (Standard)

No.	Signal	I/O	Specifications
1	+5.0 V_OUT	O	Max. 250 mA
2	GPIO0	O	GPIO0=G_TALLY_OUT ON (GND): Max. 30 mA IN
3	GPIO1	O	GPIO1=R_TALLY_OUT ON (GND): Max. 30 mA IN
4	GPIO2	O	GPIO2=Y_TALLY_OUT ON (GND): Max. 30 mA IN

No.	Signal	I/O	Specifications
5	GND	—	—
6	GND	—	—
7	GPIO5	I/O	AUX3
8	R_TALLY (X)_IN	I	ON: 24 Vdc, TTL (H), SHORT OFF: 0 Vdc, TTL (L), OPEN
9	G_TALLY (X)_IN	I	ON: 24 Vdc, TTL (H), SHORT OFF: 0 Vdc, TTL (L), OPEN
10	Y_TALLY (X)_IN	I	ON: 24 Vdc, TTL (H), SHORT OFF: 0 Vdc, TTL (L), OPEN
11	ENG (X)_OUT	O	ENG SYSTEM RECEIVE 0 dBu BALANCED
12	ENG (X)_IN	I	ENG SYSTEM TALK 0 dBu BALANCED
13	PROD (X)_OUT	O	PROD SYSTEM RECEIVE 0 dBu BALANCED
14	PROD (X)_IN	I	PROD SYSTEM TALK 0 dBu BALANCED

15	PGM1 (X)_IN	I	-20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
16	PGM2 (X)_IN	I	-20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
17	PGM3 (X)_IN	I	-20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
18	GPIO6	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
19	GPIO7	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
20	GPIO8	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
21	GPIO9	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
22	GPIO10	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)
23	GPIO11	I/O	GND/+5 V, OPEN (47 kΩ +5 V PULL UP)

(1.1.) INTERCOM / TALLY / PGM / MIC Remote/ WFM Remote / ASPECT CONTROL / GPIO [B]

Products:

- Option for HDCU-4300 (CN-3847)
- HDCU-3100 (Standard)

No.	Signal	I/O	Specifications
24	R_TALLY (Y)_IN	I	ON: 24 Vdc, TTL (H), SHORT OFF: 0 Vdc, TTL (L), OPEN
25	G_TALLY (Y)_IN	I	ON: 24 Vdc, TTL (H), SHORT OFF: 0 Vdc, TTL (L), OPEN
26	Y_TALLY (Y)_IN	I	ON: 24 Vdc, TTL (H), SHORT OFF: 0 Vdc, TTL (L), OPEN
27	ENG (Y)_OUT	O	ENG SYSTEM RECEIVE 0 dBu BALANCED
28	ENG (Y)_IN	I	ENG SYSTEM TALK 0 dBu BALANCED
29	PROD (Y)_OUT	O	PROD SYSTEM RECEIVE 0 dBu BALANCED
30	PROD (Y)_IN	I	PROD SYSTEM TALK 0 dBu BALANCED
31	PGM1 (Y)_IN	I	-20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)

32	PGM2 (Y)_IN	I	-20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
33	PGM3 (Y)_IN	I	-20 dBu/0 dBu/+4 dBu BALANCED (Selectable with CCU Menu)
34	GND	—	GND for +5.0 V _{OUT}
35	PREVIEW_OUT	O	ON (GND): Max. 30 mA IN

44	ENG (G)	—	GND for ENG
45	GND	—	—
46	PROD (G)	—	GND for PROD
47	GND	—	—
48	PGM1 (G)_IN	—	GND for PGM1
49	PGM2 (G)_IN	—	GND for PGM2
50	PGM3 (G)_IN	—	GND for PGM3

No.	Signal	I/O	Specifications
36	MIC1_GAIN_CTRL2/RECALL2_G	I/O	Refer to "Specification when MIC-REMOTE is selected" and "Specification when WF-REMOTE is selected".
37	MIC1_GAIN_CTRL1/RECALL3_B	I/O	
38	MIC1_GAIN_CTRL0/RECALL1_R	I/O	
39	MIC1_GAIN_ON/RECALL4_SEQ	I/O	
40	MIC2_GAIN_ON/RECALL8_G+B	I/O	
41	ASPECT_REMOTE (MIC2_GAIN_CTRL2)/RECALL5_ENC	I/O	
42	ASPECT_CTRL1 (MIC2_GAIN_CTRL1)/RECALL6_R+B	I/O	
43	ASPECT_CTRL2 (MIC2_GAIN_CTRL0)/RECALL7_R+G	I/O	

(2) RCP REMOTE

RCP/CNU (8P, Female)



– EXT VIEW –

No.	Signal	Specifications
1	TX (+)	SERIAL DATA
2	TX (-)	TRUNK DATA OUT RS422-A 準拠
3	RX (+)	SERIAL DATA
4	RX (-)	TRUNK DATA OUT RS422-A 準拠
5	TX GND	GND for TX
6	POWER (+) OUT	+26 V, 200mA (max)
7	POWER (-) OUT	GND for POWER
8	VIDEO (X)	75Ω, 1.0 V p-p
	CHASSIS GND	CHASSIS GND

Products:

BPU-4500/-4000

HDCU-4300/-2000/-2500/-1700

HDCU-1000/-1500

HSCU-300RT/-300RF

HXCU-FB70/-TX70

Cables available from Sony:

- CCA-5-3 CCA-cable (3m)
- CCA-5-10 CCA-Cable (10m)
- CCA-5-30/1 CCA-Cable (30m)

Other cable lengths have to be manufactured separately by third parties

Max. CCA-5- cable lengths: 200m

(3) TRUNK A

TRUNK A (12P, Female)



— EXT VIEW —

No.	Signal		Specifications
	RS422A 時	RS232C 時	
A	TX1 (X)	—	TRUNK DATA out
B	TX1 (Y)	—	
C	NC	NC	No connection
D	TX0 (Y)	TX1	TRUNK Data out
E	TX0 (X)	TX0	
F	RX0 (X)	RX0	TRUNK Data in
G	RX0 (Y)	RX1	
H	RX1 (Y)	—	
J	RX1 (X)	—	
K	GND	GND	GND for command
L	NC	NC	No connection
M	NC	NC	No connection

Products:

HDCU-4300/-2000/-2500/-1700

HDCU-1000

(4) AUX REMOTE

8-pin, Female



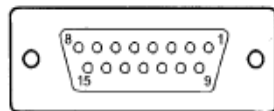
- External View -

No.	Signal	I/O	Specifications
1	TX (+)	O	SERIAL DATA OUT
2	TX (-)	O	
3	RX (+)	I	SERIAL DATA IN
4	RX (-)	I	
5	TX GND	—	GND for TX
6	POWER (+) OUT	O	RCP POWER, +30 V
7	POWER (-) OUT	O	GND for POWER
8	VIDEO (X)	O	75 Ω , 1.0 V p-p

Products:
HDCU-2000

(5) MIC REMOTE

MIC REMOTE (D-sub 15P, Female)



- EXT VIEW -

No.	Signal	Specifications
1	+5.5 V OUT	Max. 250 mA
2	TALLY GND	GND for TALLY
3	G TALLY OUT	ON (GND) : Max. 30 mA IN
4	R TALLY OUT	ON (GND) : Max. 30 mA IN
5	CHU MIC	CONT2 *1 右記参照
6	AMP	
7	GAIN IN	
		CONT1
		CONT0
8	MIC1 GAIN CONT ON/OFF IN	*2 右記参照
9	GND	GND for +5.5 V
10	TALLY OUT	R/G TALLY OUT ON (GND) : Max. 30 mA IN
11	NC	No connection
12	ASPECT REMOTE ON/OFF	L : REMOTE
13	ASPECT	CONT1 *3 右記参照
14	CTL	
		CONT2
15	MIC2 GAIN CONT ON/OFF IN	*2 右記参照

*1 : CHU MIC 1/2 AMP GAIN

CONT0	CONT1	CONT2	CHU MIC AMP GAIN
H	H	H	60 dB
L	H	H	50 dB
H	L	H	40 dB
L	L	H	30 dB
H	H	L	20 dB

*2 :

8pin	15pin	MIC GAIN CONT
L	L	MIC 1 and 2 ON
L	H	MIC 1 ON
H	L	MIC 2 ON
H	H	INTERNAL set

*3 :

CONT1	CONT2	ASPECT
L	H	SQ (16 : 9)
H	H	FC (4 : 3)
L	L	INTERNAL set
H	L	LB (4 : 3)

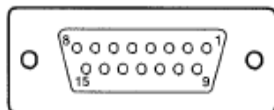
Products:

HDCU-2000/-2500/-1700

HDCU-1000/-1500

(6) WF REMOTE

WF REMOTE (D-sub 15P, Female) (HDCU1000 のみ)



- EXT VIEW -

Recall 方式**

No.	Signal	Specifications
1	NC	No connection
2	NC	No connection
3	NC	No connection
4	NC	No connection
5	RECALL2 (G)	LOW ACTIVE
6	RECALL3 (B)	
7	RECALL1 (R)	
8	RECALL4 (SEQ)	
9	GND	
10	NC	No connection
11	NC	No connection
12	RECALL5 (ENC)	LOW ACTIVE
13	RECALL6 (R+B)	
14	RECALL7 (R+G)	
15	RECALL8 (G+B)	

I735HD/I730HD**

No.	Signal	Specifications
1	LINE/FIELD	LINE : 5 V dc FIELD : 0 V dc
2	FOUR OUT	FOUR : 0 V dc
3	ONE/TWO OUT	ONE : 5 V dc TWO : 0 V dc
4	REMOTE 1 OUT	REMOTE : 5 V dc ENB : 0 V dc
5	RECALL 1 OUT	RECALL : 5 V dc
6	STORE OUT	STORE : 0 V dc
7	RECALL 0 OUT	RECALL : 5 V dc
8	THREE OUT	THREE : 0 V dc
9	GND	GND for signal
10	REMOTE SYNC OUT	REMOTE SYNC : 5 V dc
11	BOTH OUT	BOTH : 0 V dc
12	CH-1-ON OUT	CH-1 ON : 0 V dc
13	CH-2-ON OUT	CH-2
14	CH-3-ON OUT	CH-3
15	A/B OUT	A : 5 V dc B : 0 V dc

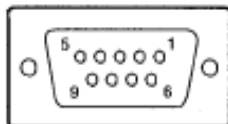
Products:

HDCU-2000

HDCU-1000

(7) TRUNK LINE

TRUNK LINE (D-sub 9P, Female) (HDCU1000 のみ)



- EXT VIEW -

No.	Signal	Specifications
1	NC	No connection
2	EXT-CMD0-IN (RXD IN)	
3	EXT-CHD0-OUT (TXD OUT)	
4	NC	12 V, 15 kΩ
5	GND	
6	NC	No connection
7	EXT-CMD1-OUT (RTS OUT)	
8	EXT-CHD1-IN (CTS IN)	
9	NC	No connection

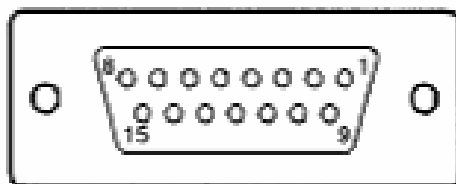
Products:

HDCU-2000

HDCU-1000

(8) I/O PORT

I/O PORT (D-sub 15P, Female) (HDCU1000 のみ)



– EXT VIEW –

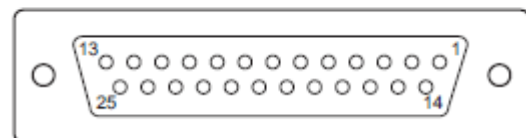
No.	Signal	Specifications
1	IN1	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)
2	IN2	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)
3	IN3	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)
4	IN4	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)
5	IN5	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)
6	IN6	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)

7	IN7	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)
8	IN8	GND/+5 V, OPEN (47 k Ω +5 V PULL UP)
9	GND	
10	OUT1	0/+5 V (1 k Ω)
11	OUT2	0/+5 V (1 k Ω)
12	OUT3	0/+5 V (1 k Ω)
13	OUT4	0/+5 V (1 k Ω)
14	OUT5	0/+5 V (1 k Ω)
15	OUT6	0/+5 V (1 k Ω)

Products:
HDCU-2000
HDCU-1000

(9) MIC/WF REMOTE/TRUNK

D-sub 25-pin, Female



- External View -

No.	Signal	I/O	Specifications
1	+ 5.5 V OUT	OUT	Max. 250 mA
2	TALLY GND	—	GND for TALLY
3	G TALLY OUT	OUT	ON (GND): Max. 30 mA IN
4	R TALLY OUT	OUT	ON (GND): Max. 30 mA IN
5	WF REMOTE: RECALL2 (G)	OUT	LOW ACTIVE
	MIC REMOTE: CAM MIC AMP GAIN CTRL 2 IN	IN	Refer to "Specification 1 of MIC CONT"
6	WF REMOTE: RECALL3 (B)	OUT	LOW ACTIVE
	MIC REMOTE: CAM MIC AMP GAIN CTRL 1 IN	IN	Refer to "Specification 1 of MIC CONT"
7	WF REMOTE: RECALL1 (R)	OUT	LOW ACTIVE
	MIC REMOTE: CAM MIC AMP GAIN CTRL 0 IN	IN	Refer to "Specification 1 of MIC CONT"

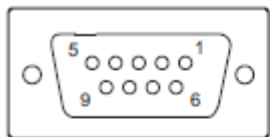
8	WF REMOTE: RECALL4 (SEQ)	OUT	LOW ACTIVE
	MIC REMOTE: MIC GAIN CTRL ON/OFF IN	IN	Refer to "Specification 2 of MIC CONT"
9	SEQ CTRL OUT(X)	OUT	OPEN COLLECTOR + (PNP)/- (NPN)
10	STAIR CASE OUT (G)	—	GND for STAIR CASE OUT (X)
11	RX (-)	IN	TRUNK DATA IN
12	TX (+)	OUT	TRUNK DATA OUT
13	GND	—	GND for +5.5 V
14	GND	—	GND for WF REMOTE
15	TALLY OUT	OUT	R/G TALLY OUT ON (GND): MAX 30 mA IN
16	PREVIEW OUT	OUT	ON (GND): OPEN COLLECTOR
17	WF REMOTE: RECALL5 (ENC)	OUT	LOW ACTIVE
	MIC REMOTE: ASPECT REMOTE ON/OFF IN	IN	L: REMOTE

Products:
HSCU-300RF/-
300RT
HXC-TX70

18	WF REMOTE: RECALL6 (R+B)	OUT	LOW ACTIVE
	MIC REMOTE: ASPECT CTRL1 IN	IN	Refer to "Specification of ASPECT"
19	WF REMOTE: RECALL7 (R+G)	OUT	LOW ACTIVE
	MIC REMOTE: ASPECT CTRL2 IN	IN	Refer to "Specification of ASPECT"
20	WF REMOTE: RECALL8 (G+B)	OUT	LOW ACTIVE
	MIC REMOTE: MIC GAIN CTRL ON/OFF IN	IN	Refer to "Specification 2 of MIC CONT"
21	SEQ CTRL OUT (G)	—	GND for SEQ CTRL OUT (X)
22	STAIR CASE OUT (X)	OUT	Refer to "Stair Case signal"
23	GND	—	GND for TRUNK
24	RX (+)	IN	TRUNK DATA IN
25	TX (-)	OUT	TRUNK DATA OUT

(10) TRUNK

D-sub 9-pin, Female, RS-232C



- External View -

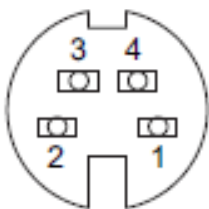
No.	Signal	Specifications
1	NC	No connection
2	RX (-)	TRUNK Data in
3	TX (+)	TRUNK Data out
4	NC	No connection
5	GND	—
6	NC	No connection
7	NC	No connection
8	NC	No connection
9	NC	No connection

Products:
HXCU-FB70

(11) S-VIDEO OUT

S VIDEO OUTPUT

4-pin, Female



- External View -

No.	Signal	Specifications
1	Y OUT (G)	GND for Y OUT (X)
2	C OUT (G)	GND for C OUT (X)
3	Y OUT (X)	Y = 1.0 V p-p $\pm 10\%$ Z _o = 75 Ω $\pm 5\%$ DC = 0 ± 200 mV
4	C OUT (X)	C = 0.286 V p-p $\pm 10\%$ (NTSC) C = 0.300 V p-p $\pm 10\%$ (PAL) Z _o = 75 Ω $\pm 5\%$ DC = 0 ± 200 mV

Products:
HXCU-FB70