

# **TU-Z3A/CX-Z3A TRIAX SYSTEM SERVICE MANUAL**

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**Hitachi Kokusai Electric Inc.**

# **1. SPECIFICATIONS**

# 1. Specifications

## ■ Specification of Direction

Direction	Model		Triax connector	Intercom headset	Audio output	ENCR OUT setup
	Base station	Adapter				
J	TU-Z3AJ	CX-Z3AJ	Tajimi	XLR-5pin	XLR-3pin(Male)	0mV
U	TU-Z3A	CX-Z3A	Kings	XLR-5pin	XLR-3pin(Female)	50mV
P	TU-Z3AP	CX-Z3AP	Fischer	XLR-5pin	XLR-3pin(Female)	0mV

## ■ General

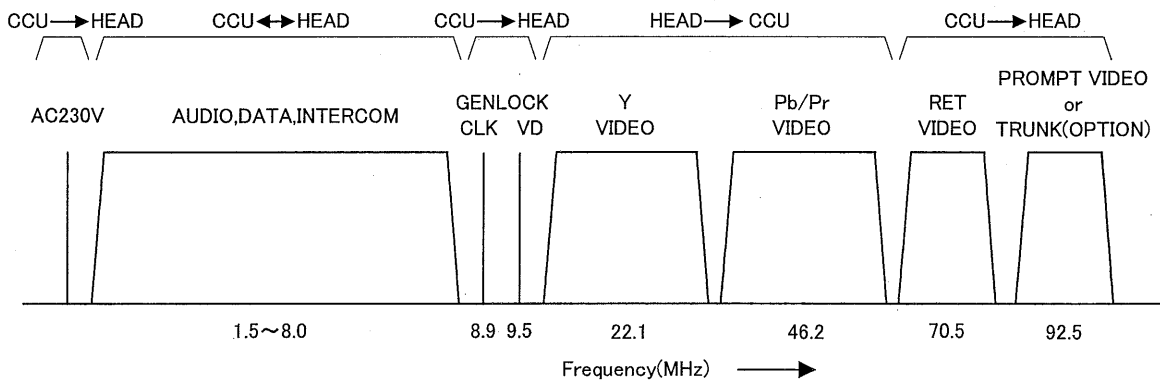
### • Video band width(Base band)

Y signal:	10MHz
Pb,Pr signal:	5MHz
RET signal:	5MHz
PROMPT signal:	5MHz

### • Maximum cable length

Cable type	Diameter (mm)	Maker	Maximum cable length(m)	
			W/ PROMPT	Cable type
Triaxial Cable				Triaxial Cable
4.8/1.0 EFTXF	8.6	FUJIKURA		4.8/1.0 EFTXF
9.6/2.2 EFTXF	14.5	FUJIKURA		9.6/2.2 EFTXF
9267	9.1	BELDEN		9267
9232	13.2	BELDEN		9232
1.0S/4.5S	8.5	FELTEN		1.0S/4.5S
1.4S/6.6S	11.0	FELTEN		1.4S/6.6S
Coaxial Cable				Coaxial Cable
5C-2V	7.5	----		5C-2V
7C-2V	10.2	----		7C-2V
10C-2V	13.1	----		10C-2V

### • Frequency allocation



- Power supply voltage
  - TU-Z3J/CX-Z3J AC100V 50/60Hz
  - TU-Z3/CX-Z3 AC117V 60Hz
  - TU-Z3P/CX-Z3P AC230V 50Hz
  
- Power consumption
  - 130W approx. (AC operation,including Z-3000W/GM-51 and AUX POWER OUT 50W)
  - TU-Z3A :25W approx. (DC operation)
  - CX-Z3A :33W approx. (DC operation,including Z-3000W/GM-51)
  
- Ambient Temperature
  - Operating: TU-Z3 0 to +40°C
  - CX-Z3 -10 to +45°C
  - Storage: -20 to +60°C
  
- Dimensions
  - TU-Z3 212(W)×163(H)×381(D)mm
  - CX-Z3 135(W)×196(H)×215(D)mm
  
- Mass
  - TU-Z3 9.0kg approx.
  - CX-Z3 3.0kg approx.

## ■ Input output signals(TU-Z3A)

### Input signals

INTERCOM	-70dBm	XLR-5pin
B BST (GEN LOCK)	B-BST 0.45Vp-p/75Ω(loop through)	BNC
RET-1	VS or VBS 1Vp-p/75Ω(loop through)	BNC
RET-2	VS or VBS 1Vp-p/75Ω(loop through)	BNC
PROMPT	VS or VBS 1Vp-p/75Ω(loop through)	BNC
D RET1 IN [Factory option]	D1(active through)/75Ω	BNC
D RET2 IN [Factory option]	D1(active through)/75Ω	BNC
COMMUNICATION		D-sub 15pin
INTERCOM	4wire: 0dBm HIGH 2wire: 0dBs or -15dBs 200Ω at 2W	
PGM	0dBm HIGH	
R/G TALLY	24V DC or Contact	
REMOTE1/RS-232C (switchable)	1.5Vp-p RS-232C	4pin D-sub 25pin
REMOTE2	1.5Vp-p	4pin
DC IN	DC 12V (DC +10.5V~+17V)	XLR-4pin

### Output signals

INTERCOM	0dBs MAX+15dB 以上	XLR-5pin
ENCR OUT	VBS 1Vp-p/75Ω	BNC(×3)
COMPONENT/RGB (switchable)		BNC
R/Pr	R: 0.7Vp-p/75Ω Pr: 0.7Vp-p/75Ω (NTSC) 0.525Vp-p/75Ω (PAL)	
G/Y	G: 0.7Vp-p/75Ω Y: VS 1Vp-p/75Ω	
B/Pb	B: 0.7Vp-p/75Ω Pb: 0.7Vp-p/75Ω (NTSC) 0.525Vp-p/75Ω (PAL)	
DIGITAL OUT [Factory option]	D1/75Ω	BNC(×2)
D RET1 OUT [Factory option]	D1/75Ω	BNC
D RET2 OUT [Factory option]	D1/75Ω	BNC
PIX OUT (R, G, B, ENCR)	VS or VBS 1.0Vp-p/75Ω	BNC
WF OUT (R, G, B, ENC, SUP, SEQ)	VS or VBS 1.0Vp-p/75Ω	BNC
MIC OUT 1	0dBm/600Ω	XLR-3pin
MIC OUT 2	0dBm/600Ω	XLR-3pin
COMMUNICATION		D-sub 15pin
INTERCOM	4wire: 0dBm/600Ω 2wire: 0dBs or -15dBs/200Ω	
TALLY OUT		D-sub 9pin
R/G TALLY	Contact	
W/N CONTROL	Contact	
REMOTE1/RS-232C (switchable)	1.5Vp-p RS-232C	4pin D-sub 25pin
REMOTE 2	1.5Vp-p	4pin

## ■ Input output signals(CX-Z3A)

### Input signals

Camera head		
Video signals (Y, Pb, Pr)	each 10bit digital	
Control signals	1.5Vp-p	
MIC-1	-20dBm	
DC IN	DC 12V (DC +10.5V to +17V)	XLR-4pin (Male)
MIC-2	-70, 60, 50, 40, 30, 20, 10, +4dBm	XLR-3pin (Female)
INTERCOM (HEAD SET)	-70dBm	XLR-5pin (Female)
VF AUX		6pin

### Output signals

Camera head		
AUX VIDEO	VS or VBS 1Vp-p/75Ω	
GEN LOCK	B-BST 0.45Vp-p/75Ω	
Control signals	1.5Vp-p	
RET VIDEO	VS or VBS 1.0Vp-p/75Ω	BNC
PROMPT VIDEO	VS or VBS 1.0Vp-p/75Ω	BNC
INTERCOM (HEAD SET)	0dBs MAX+15dB	XLR-5pin (Female)
SCRIPT	DC 12V/0.3A	
AC 230V	AC 230V/50VA	5pin

## ■ Accessories

- Camera control panel
  - Base station internal/external dual type
  - External base station dedicated type
- Setup control unit
- D1 Digital interface
  - DI-Z3

## **2. OPERATING INSTRUCTIONS**



**COMPONENT TRIAX SYSTEM  
TU-Z3A/CX-Z3A  
OPERATING INSTRUCTIONS**

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Please read these operating instructions carefully for proper operation,  
and keep them for future reference.

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## Outline and features

The Hitachi SK-777A, SK-888 and Z-4000 series portable cameras can be combined with a special adapter to compose a triax system. This will provide digital signal processing to allow high quality video and audio signals to be sent up to 1.5 kilometers.

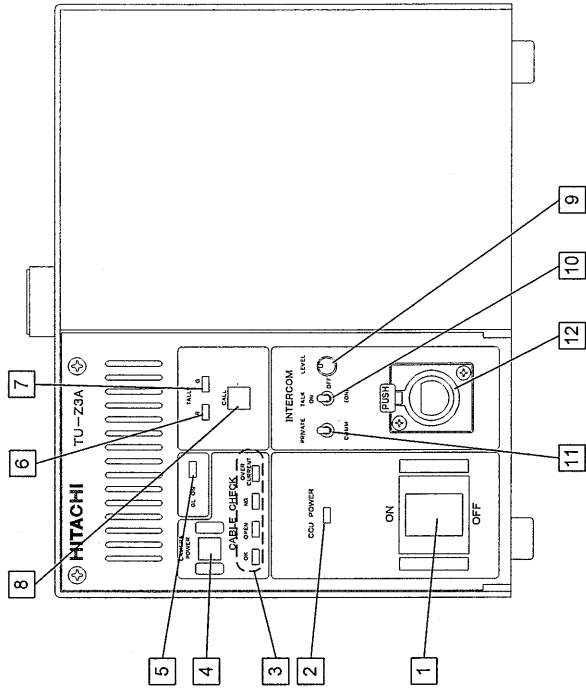
### Features

- **High quality video transmission**  
The wide bandwidth of the Y(10MHz), Pb/Pb(5MHz) and component FM transmission provide high resolution video with a high S/N ratio.
- **High quality sound transmission**  
Bi-directional digital transmission is used for audio signal and control data. High sound quality is obtained from the microphone output and intercom.
- **Versatile intercom functions**  
Two-wire, four-wire and other intercom systems can be accommodated. Two lines (producer and engineer) can be selected from the camera position.
- **Video signal outputs**  
The three encoder outputs are RGB or Y, Pb, Pr, one pix monitor output and one waveform monitor output.
- **Video signal inputs**  
Inputs are provided for two return video lines and a prompter video line. The return video input can be selected from the camera. Also, the prompter video input can be switched to the trunk circuit (option).
- **Digital video interface [optional]**  
Two D1 serial digital output lines and two D1 return video digital input lines can be provided as options. The return video input can be selected from the camera.
- **AC/DC operation**  
Both AC and DC power supplies are accommodated.  
(Coax is used during DC operation.)
- **Half rack size base station**  
The compact base station is half rack width and 4 units (installed in rack mount) high. An optional camera control panel (RC-Z3, CP-7) can be built in.
- **High S/N**  
The low noise modulator/demodulator circuit and newly developed enhanced digital noise reduction circuit to deliver high signal to noise ratio.

1

## Facility names and functions

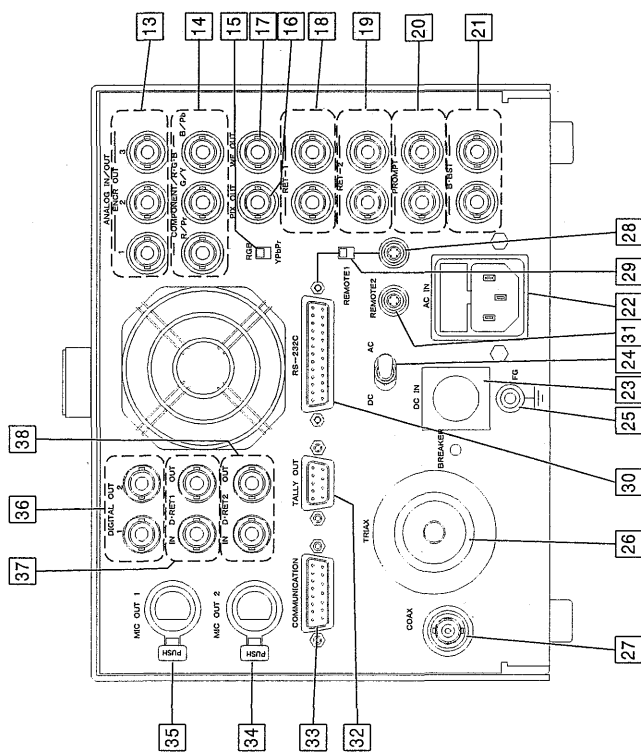
### TU-Z3A



- 1 **CCU POWER switch**  
CCU power on/off switch.
- 2 **CCU POWER LED**  
Lights when power is on.
- 3 **CABLE CHECK LED**  
OK(Flashes): Cable check in progress. CAMERA POWER switch 4 is inoperative.  
OK(Lights): CAMERA POWER switch 4 can be operated.  
OPEN: Triax cable not connected.  
NG: Triax cable abnormal.  
OVER CURRENT: Excess current in triax cable.  
**Note:** CAMERA POWER switch 4 is inoperative when OPEN, NG or OVER CURRENT LED is lighted.
- 4 **CAMERA POWER switch**  
Camera power on/off switch; lights at power on.
- 5 **GL ON LED**  
Lights during genlock operation.
- 6 **R TALLY LED**  
Lights at red tally input or when sending CALL signal from camera.
- 7 **G TALLY LED**  
Lights at green tally input.
- 8 **CALL button**  
Press to call the camera.
- 9 **INTERCOM LEVEL control**  
Adjusts intercom listening volume.
- 10 **TALK switch**  
Intercom microphone on/off switch.
- 11 **PRIVATE/COMM switch**  
PRIVATE: Communicate with camera only  
COMM: Communicate with entire system
- 12 **Intercom connector(XLR,5P)**  
Connection for optional MT-12MF headset.

2

## Facility names and functions



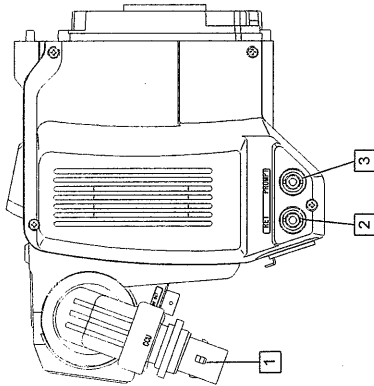
- 13 ENCR OUT connectors (BNC)**  
Composite video outputs for 3 lines
- 14 R/P, G/Y, B/Pb connectors (BNC)**  
R, G, B or Y, Pb, Pr signal outputs
- 15 RGB/YPbPr switch**  
Selects between RGB and YPbPr at R/P; G/Y, B/Pb connectors **14**.
- 16 PIX OUT connector (BNC)**  
Connection for picture monitor.
- 17 WF OUT connector (BNC)**  
Connection for waveform monitor.
- 18 RET-1 connectors (BNC)**  
Connection for auxiliary video signal. The signal is sent to the camera viewfinder or the CX-Z3A RET connector (selected by pressing RET1 of the CX-Z3A).
- 19 RET-2 connectors (BNC)**  
Connection for auxiliary video signal. The signal is sent to the camera viewfinder or the CX-Z3A RET connector (selected by pressing RET2 of the CX-Z3A).
- 20 PROMPT connectors (BNC)**  
Prompter video signal connection. The signal is sent to the CX-Z3A PROMPT connector.
- 21 B.BST connectors (BNC)**  
Connection for black burst signal when using genlock.
- 22 AC IN connector**  
Connect to power source with accessory AC cable. Set the AC/DC switch **24** to AC.

## Facility names and functions

- 23 DC IN connector (XLR 4 pin)**  
Connect when operating the TU-Z3A from 12VDC. Set the AC/DC switch **24** to DC.
- Note:** Camera power is not supplied from the TU-Z3A and must be prepared separately.
- 24 AC/DC switch**  
AC: Use TU-Z3A in AC mode  
DC: Use TU-Z3A in DC mode
- 25 FG terminal**  
Frame ground terminal.
- 26 TRIAX connector**  
Connect triax cable. Cannot be used simultaneously with coax connector **27**.
- 27 COAX connector**  
Connect coaxial cable for using in coax mode. Cannot be used simultaneously with triax connector **26**.
- 28 REMOTE1 connector**  
Connection for the separately sold camera control panel or setup control unit.
- 29 REMOTE1 switch**  
Selects remote1 input for REMOTE1 connector **28** or RS-232C **30** connector.
- 30 RS-232C connector**  
Use for camera control via RS-232C.
- 31 REMOTE2 connector**  
Connection for the separately sold camera control panel or setup control unit. However, in this case, the internal RC-Z3 and CP-7 cannot be used.
- 32 TALLY OUT connector**  
Contact outputs for tally signals.
- 33 COMMUNICATION connector**  
Intercom and tally inputs from external system.
- 34 MIC OUT1 connector (XLR 3 pin)**  
Sound signal from camera output at about 0dBm.
- 35 MIC OUT2 connector (XLR 3 pin)**  
Sound signal from CX-Z3A output at about 0dBm.
- 36 DIGITAL OUT connectors (BNC) [optional]**  
Two digital serial outputs compatible with EDH.
- 37 D RET1 connectors (BNC) [optional]**  
Connection for auxiliary serial digital video signal input. If connecting an analog signal, set AUX SEL of the FUNCTION1 menu to ANALOG.
- 38 D RET1 connectors (BNC) [optional]**  
Connection for auxiliary serial digital video signal input. If connecting an analog signal, set AUX SEL of the FUNCTION1 menu to ANALOG.

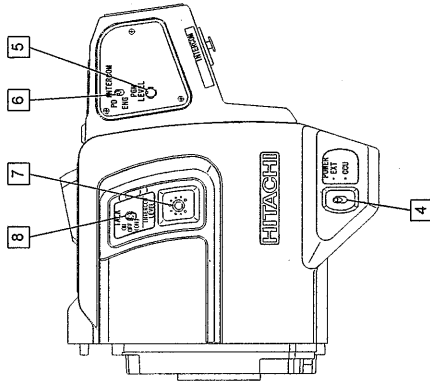
# Facility names and functions

CX-Z3A



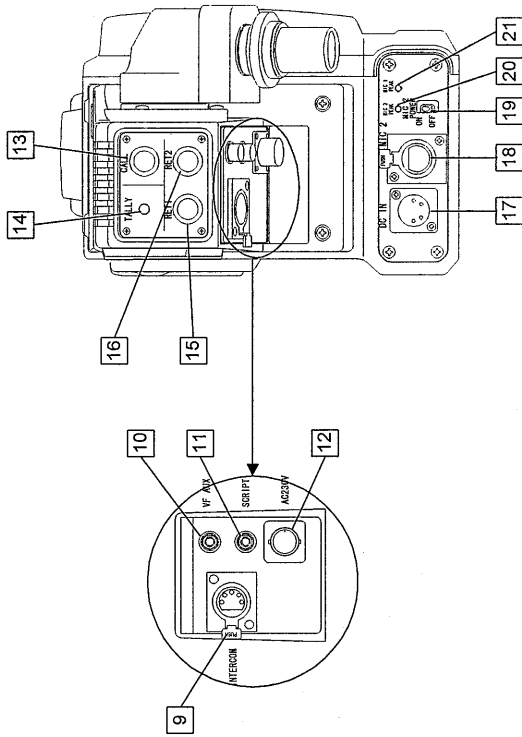
- 1 TRIAX connector**  
Triax cable connection.
- 2 RET connector (BNC)**  
Return signal output selected by RET1 button **15** and RET2 button **16**.
- 3 PROMPT connector (BNC)**  
Prompter signal output.
- 4 POWER switch**  
CCU : Power supplied via triax cable  
EXT : Power supplied via DC input connector **17**

When power is supplied via the triax cable and the switch is set to EXT, the protector operates to cut off the camera head power. Power is not supplied even if the switch is set to CCU. To supply power to the camera head, press the TU-Z3A Camera Power switch.



- 5 PGM LEVEL control**  
Adjusts program audio volume.
- 6 PD/ENG switch**  
Selects between intercom system PD and ENG inputs.
- 7 INTERCOM LEVEL control**  
Adjusts intercom sound volume.
- 8 TALK ON/OFF switch**  
Intercom microphone on/off switch.

# Facility names and functions



- 9 INTERCOM connector (XLR 5 pin)**  
The optional MT-12BF headset can be connected.
- 10 VF AUX connector**  
Remote control for the TALK ON/OFF switch **8**, RET1 switch **15** and RET2 switch **16**.
- 11 SCRIPT connector**  
Lights the 12 ± 0.3 V script lamp.
- 12 AC230V connector**  
Output connection for 230VAC.
- 13 CALL button**  
Press to call the CCU.
- 14 TALLY LED**  
Lights at external R tally input or call signal from CCU.
- 15 RET1 switch**  
Selects CCU RET-1 input. Shown on camera viewfinder only while button is pressed.
- 16 RET2 switch**  
Selects CCU RET-2 input. Shown on camera viewfinder only while button is pressed.
- 17 DC IN connector (XLR 4 pin)**  
Use in the camera COAX\* or self-contained mode.  
\*Note: Connect a BNC conversion adapter to the triax connector **1**.
- 18 MIC2 connector (XLR 3 pin)**  
Connection for separately sold microphone. Microphone power can also be supplied.
- 19 MIC2 POWER switch**  
On/off switch for phantom power supplied to the MIC2 connector **18**.
- 20 MIC2 PEAK LED**  
Lights when the MIC2 input volume exceeds the rated level by about 10dB.
- 21 MIC1 PEAK LED**  
Lights when the MIC1 connector (camera head) input volume exceeds the rating by about 10dB.

## System configuration

Attach the CX-Z3A triax adapter to the camera. Then connect the camera control panel and setup control unit to the TU-Z3A.

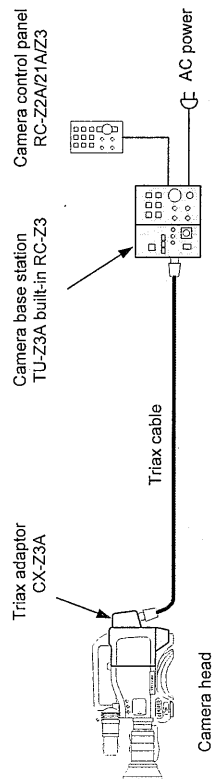
**Note:** The incorporated RC-Z3, CP-7 can no longer be used when the camera control panel or setup control unit is connected to the TU-Z3A REMOTE2 connector (REMOTE2 has priority).

### 1. TRIAX mode (AC) operation

When the TU-Z3A CCU POWER switch is set to ON, the triax cable connection is checked automatically (about 10seconds), then power can be supplied to the camera by pressing the CAMERA POWER button to produce a video output signal.

The CABLE CHECK LED lights OK when the triax cable is normal.  
The intercom can be used when the CCU POWER switch is ON.

**Note:** Camera power is not supplied in the following situations.



### 2. COAX mode (DC) operation

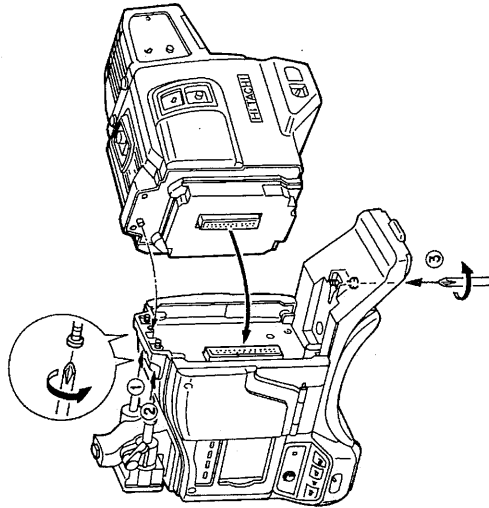
The CX-Z3A can operate with 12VDC power supply and coax cable connection (conversion connector required). Set the CX-Z3A POWER switch to EXT. Set the CCU POWER switch of the TU-Z3A to ON to obtain a video signal output.

**Note:** During the cable check process, the LED may briefly indicate OPEN. This is not due to fault or defect. During the coax mode, the TU-Z3A can also be operated from 12VDC.

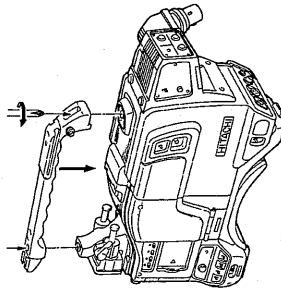
### 3. Camera stand alone operation

Supply 12VDC to the CX-Z3A, but do not connect either triax or coax cable. The camera can be operated in stand-alone mode. The video signal appears at the camera VIDEO OUT and MONI OUT connectors.

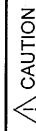
## Traix adapter attachment



1. Align the adapter with the camera guide and guide pin. Attach the adapter and engage the connector.
2. Tighten the screws provided with the handle to secure the camera adapter to the camera.



3. Install the handle with two screws.



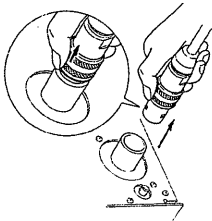
**CAUTION**  
Tighten the screws completely. Check for absence of wobble between the camera and adapter.

## Triax cable connection

The triax cable connector has a locking mechanism. Release the lock to disengage the connector.

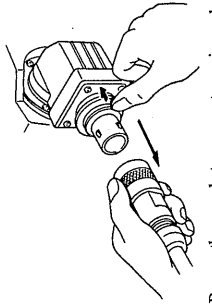
### 1. Kings connector

TU-Z3A



Slide the plug connector ring outward when disengaging the connector.

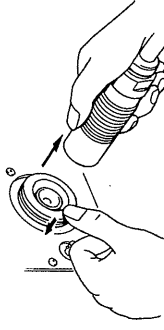
CX-Z3A



Press the socket connector ring downward when disengaging the connector.

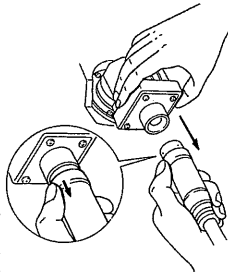
### 2. Fischer connector

TU-Z3A



Press the socket connector ring downward when disengaging the connector.

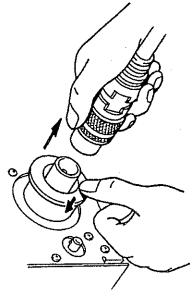
CX-Z3A



Slide the plug connector ring outward when disengaging the connector.

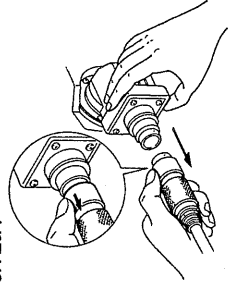
### 3. Tajimi connector

TU-Z3A



Press the socket connector ring downward when disengaging the connector.

CX-Z3A



Slide the plug connector ring outward when disengaging the connector.

## Function menu

### Function menu

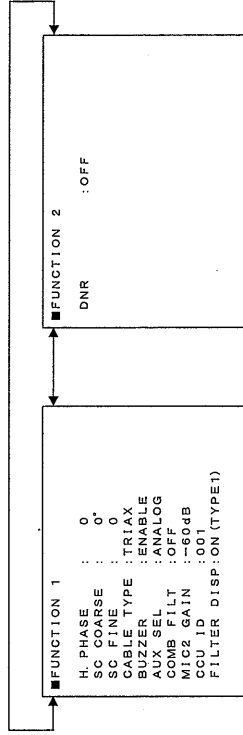
Function menus for setting the CCU and camera are shown on the camera control panel or setup control unit (when connected).

### Menu operation

Menu operation differs with the equipment. Refer to the remote controller operating instructions for details.

### CCU menu

The CCU menu appears when the color bar is on.



### Camera menu

The camera menu appears when the color bar is off. Contents differ with the camera. Refer to the camera operating instructions.

# Function menu

## FUNCTION1 menu

```

FUNCTION 1
H.PHASE : 0
SC COARSE : 0
SC FINE : 0
CABLE TYPE : TRIAX
BUZZER : ENABLE
ANALOG : OFF
COMB FILT : OFF
MIC2 GAIN : -60dB
CCU ID : 001
FILTER DISP: ON(TYPE1)
    
```

Item	Setting	Factory setting	Description
H.PHASE	-128 to 127	55	Set during genlock operation. Genlock adjustment (horizontal phase).
SC COARSE	0°, 90°, 180°, 270°	0°	Set during genlock operation. Subcarrier phase coarse adjustment.
SC FINE	-128 to 127	0	Set during genlock operation. Subcarrier phase fine adjustment.
CABLE TYPE	TRIAx, COAX	TRIAx	Set according to the cable being used. TRIAx: When using triax cable COAX: When using coaxial cable
BUZZER	ENABLE, DISABLE	ENABLE	Sets buzzer operation during call input. ENABLE: Buzzer sounds. DISABLE: Buzzer does not sound.
AUX SEL	ANALOG, DIGITAL	ANALOG	Selects auxiliary input. ANALOG: RET-1 and RET-2 DIGITAL: DRET1 and DRET2 Digital setting is effective only when the optional DI-Z3 is connected.
COMB FILT	OFF, ON	OFF	Comb filter on/off
MIC2 GAIN	-70dB, -60dB, -50dB, -40dB, -30dB, -20dB, -10dB, +4dB	-60dB	Set according to MIC2 (CX-Z3A) input level.
CCU ID	001 to 012	001	Set CCU ID. When using the SU-2100, required to distinguish the SU-2100 CCU.
FILTER DISP	OFF, ON(TYPE1), ON(TYPE2-A), ON(TYPE2-B)	ON(TYPE1)	Set Pix out filter indication type. Refer to details below.

## Filter indication

FUNCTION1 FILTER DISP selects indication at bottom left of screen.

FILTER DISP setting	Filter1 display	Filter2 display	Filter3 display	Filter4 display
OFF	None	None	None	None
ON(TYPE1)	1	2	3	4
ON(TYPE2-A)	1.3200K	2.5600K+1/16ND	3.5600K	4.5600K+1/64ND
ON(TYPE2-B)	1.3200K	2.5600K+1/16ND	3.5600K	4.EFFECT

Note: Set TYPE2-A and TYPE2-B according to the filters.

# Function menu

## FUNCTION2 menu

```

FUNCTION 2
DNR : OFF
    
```

Item	Setting	Factory setting	Description
DNR	OFF, ON	OFF	DNR on/off. Noise is reduced at ON setting.

# Cable check

## Cable check

LED lights when cable is connected. For safety, the camera power defaults to off according to the result.

Indication	Content
Screen: No display LED: OK flashes	Cable being checked. Camera power on inhibited.
Screen: CABLE LENGTH:***M LED: OK lights	Cable anomaly absent Camera power on/off enabled. (CAMERA POWER switch operable.)
<b>Camera power off</b> Screen: CHECK CAMERA CABLE (INNER-OUTER SHORT?) LED: NG flashes <b>Camera power on</b> Screen: None LED: NG flashes	Cable inner and outer shield possibly shorted. Camera power on/off enabled. (CAMERA POWER switch operable.)
Screen: CHECK CAMERA CABLE (OUTER SHIELD OPEN?) LED: NG lights Screen: INCOM LINE NG LED: NG lights	Cable outer shield possibly open. Camera power defaults to off and camera power switch is rendered inoperative. Cable conductor possibly open. Camera power defaults to off and camera power switch is rendered inoperative.
Screen: INCOM LINE NG LED: NG lights	Cable inner shield possibly open. Camera power defaults to off and camera power switch is rendered inoperative.
<b>Camera power off</b> Screen: CHECK CAMERA CABLE (CENTER SHORT?) LED: NG lights <b>Camera power on</b> Screen: OVER CURRENT LED: OVER CURRENT lights (Held after 230VAC off) Screen: CAMERA CABLE OPEN LED: OPEN lights	Cable conductor and shield possibly shorted. Camera power defaults to off and camera power switch is rendered inoperative. Cable is not connected. Camera power defaults to off and camera power switch is rendered inoperative.
Screen: COAX MODE NOW !!! PUSH BAR AND FUNC SW, CHANGE TO TRIAX MODE	Triax cable is connected, but CABLE TYPE (FUNCTION1 menu) is set to COAX.

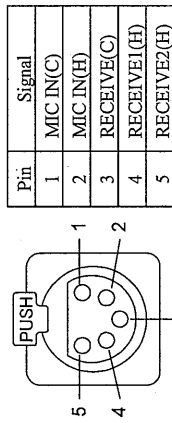
When coax cable is connected, the cable check Open LED always lights. The camera power switch defaults to off (LED extinguished) and is inoperative.

# Service information

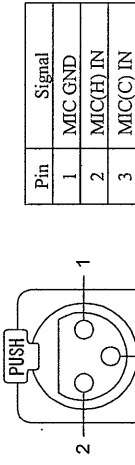
## Connector pin diagrams

### TU-Z3A

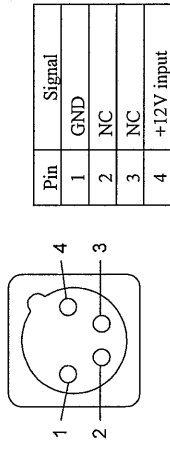
INTERCOM (5 pin XLR female:HA16PRH-5S)



MIC OUT 1,2 (3 pin XLR female:HR16PRM-3SE)

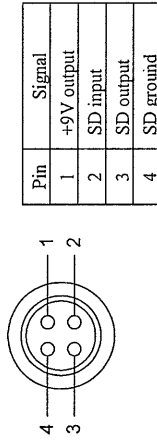


DC IN (4 pin XLR male:HA16RA-4P)

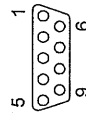


Remote 1,2 (4 pin female:HR10A-7R-4S(01))

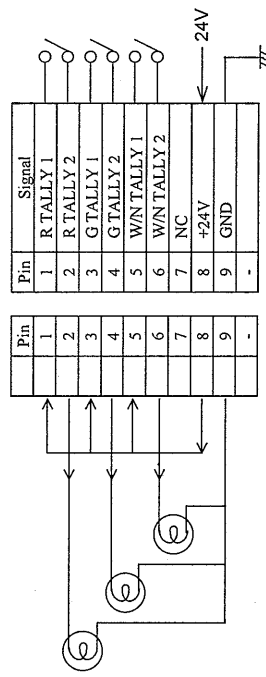
Mating connector:HR10A-7P-4P



TALLY OUT (9pin D-sub female:CDS3109-0123)

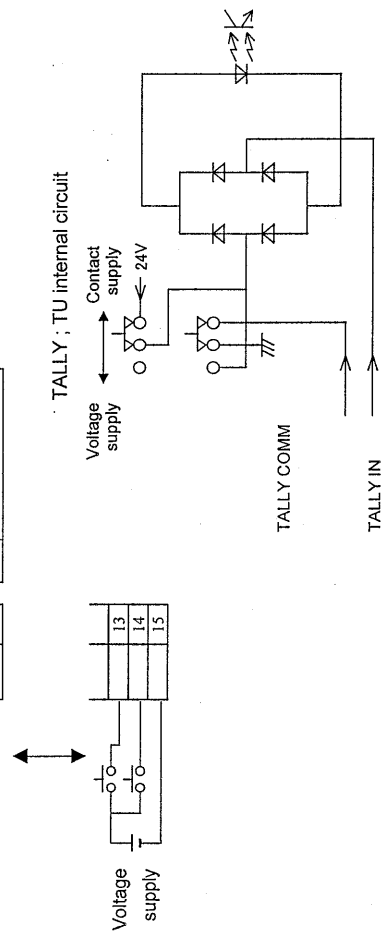
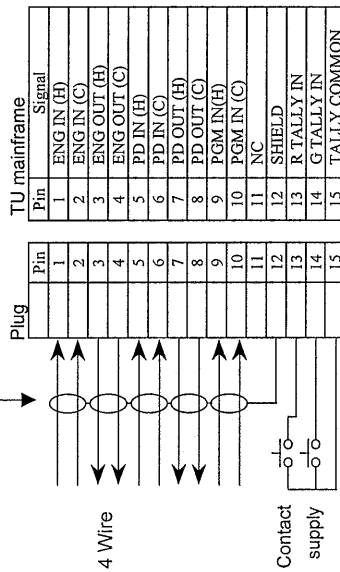
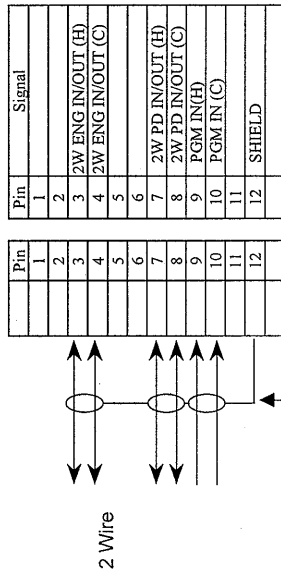
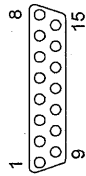


## Operating circuit example



## Service information

COMMUNICATION(15pin D-sub male;CDC3115-0123)



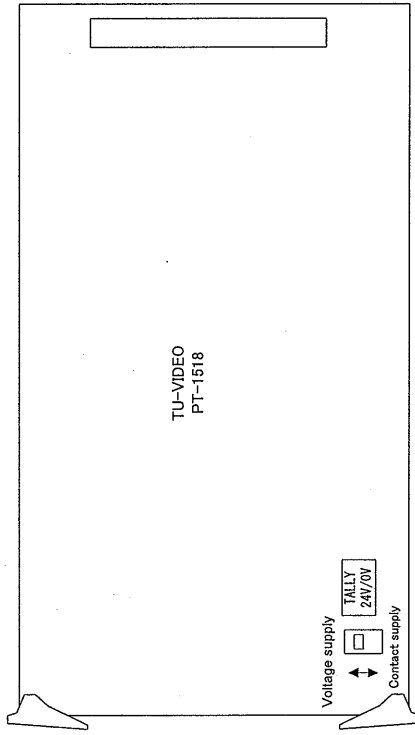
## Service information

### Internal switch setting

Set the TALLY and INTERCOM switches according to the systems connected to the TU-Z3A rear panel COMMUNICATION connector.

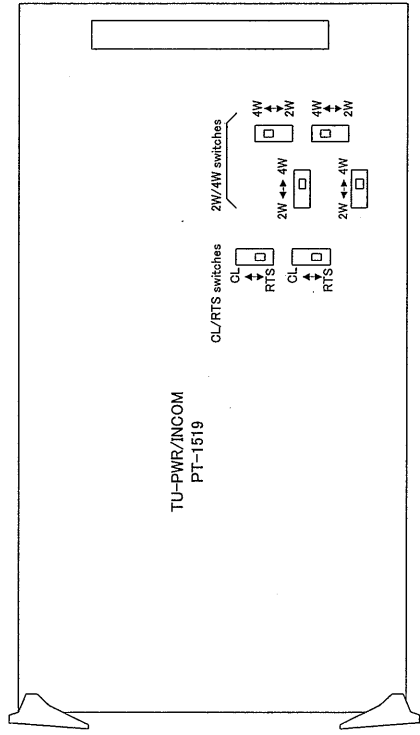
The tally input can be contact or voltage supply.

When changing, set the TU-Z3A internal TV-VIDEO board switch accordingly.



The intercom can be 4 wire or 2 wire (Clearcom, RTS).

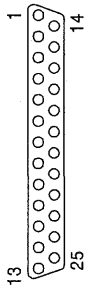
When changing, set the TU-Z3A internal TV-PWR/INCOM board switches accordingly.





# Service information

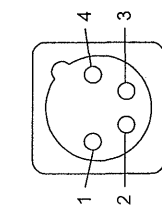
RS-232C(25pin D-sub female:CDS3125-0123)



Pin	Signal	Pin	Signal
1	GND	14	NC
2	TD	15	NC
3	RD	16	NC
4	RTS	17	NC
5	CTS	18	NC
6	NC	19	NC
7	GND	20	NC
8	NC	21	NC
9	NC (STAIR CTL)	22	NC
10	NC (STAIR OUT)	23	NC
11	NC (SHIELD)	24	NC
12	NC	25	NC
13	NC	-	-

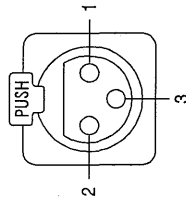
### CX-Z3A

DC IN (4 pin XLR male:HA16RA-4P)



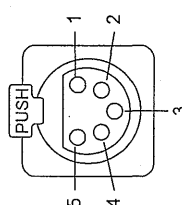
Pin	Signal
1	GND
2	NC
3	NC
4	+12V input

MIC 2 IN(3 pin XLR female:HR16PRQ-3SE(05))



Pin	Signal
1	MIC GND
2	MIC(H) IN
3	MIC(C) IN

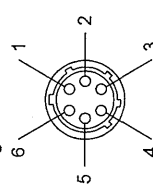
INTERCOM (5 pin XLR female:HA16PRH-5S)



Pin	Signal
1	MIC IN(C)
2	MIC IN(H)
3	RECEIVE(C)
4	RECEIVE(H)
5	RECEIVE2(H)

VF AUX(6 pin female:HR10A-7R-6SB(01))

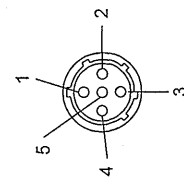
Mating connector:HR10A-7P-6P



Pin	Signal
1	AUX 1 CTL
2	AUX 2 CTL
3	NC
4	GND
5	MIC ON/OFF
6	GND

SCRIPT (5 pin female:HR10A-7R-5SB(01))

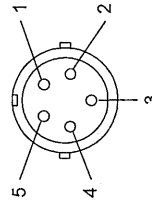
Mating connector:HR10A-7P-5P



Pin	Signal
1	SCRIPT +12V
2	GND
3	NC
4	NC
5	NC

AC230 V OUT (5 pin female:RM12BRB-5S)

Mating connector:RM12BPG-5PH



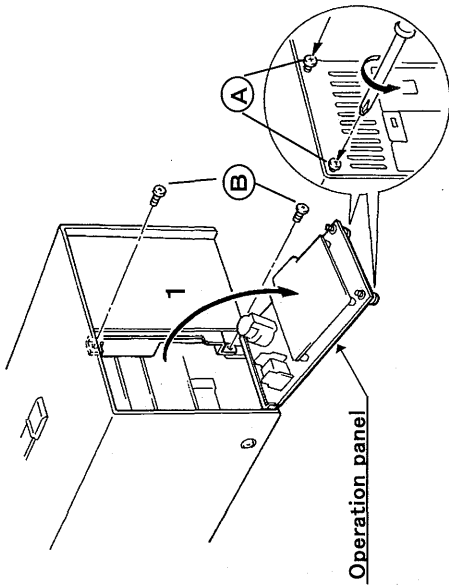
Pin	Signal
1	AC 230V
2	AC 0V
3	GND
4	TALLY OUT(*)
5	AC CTL

(\*) open collector

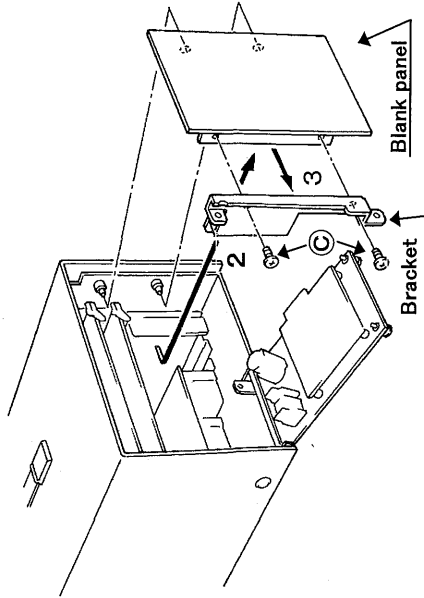
# Service information

## Camera control panel installation

1. Take out 2 screws A and open the operation panel.



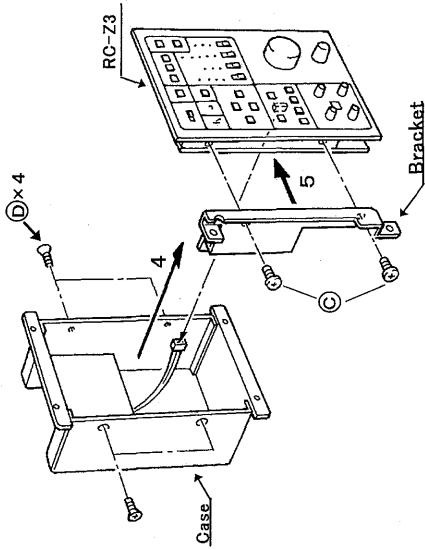
2. Take out 2 screws B and disengage the blank panel and bracket.
3. Take out 2 screws C and disengage the bracket from the blank panel.



**Caution:** These steps must be conducted only by a qualified technician. There is risk of both electrical shock and equipment damage.

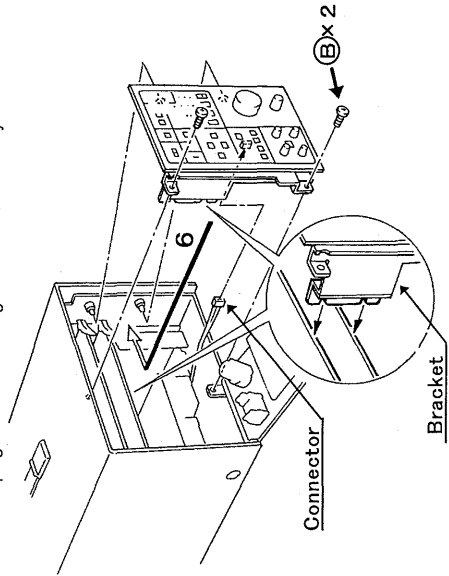
## Service information

- Take out 4 screws D from the camera control panel. Disconnect the connector and disengage the case from the camera control panel.
- Attach the bracket to the camera control panel with 2 screws C.



- Connect the TU-Z3A internal conductor to the camera control panel. Align the camera control panel mounting holes with the TU-Z3A guide pins. Align the 2 notches of the bracket with the TU-Z3A units and secure the camera control panel with 2 screws B.

**Note:** Use care to avoid crimping the cables during mechanical assembly.



## Specifications

### ■ Specification of Direction

Direction	Model		Triax connector	Intercom headset	Audio output	ENCR OUT setup
	Base station	Adapter				
J	TU-Z3AJ	CX-Z3AJ	Tajimi	XLR-5pin	XLR-3pin(Male)	0mV
U	TU-Z3A	CX-Z3A	Kings	XLR-5pin	XLR-3pin(Female)	50mV
P	TU-Z3AP	CX-Z3AP	Fischer	XLR-5pin	XLR-3pin(Female)	0mV

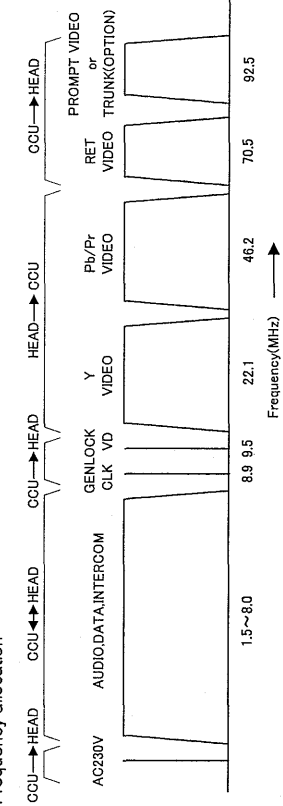
### ■ General

- Video band width(Base band)
  - Y signal: 10MHz
  - Pb/Pr signal: 5MHz
  - RET signal: 5MHz
  - PROMPT signal: 5MHz

### ● Maximum cable length

Cable type	Diameter (mm)	Maker	Maximum cable length(m)	
			W/ PROMPT	Cable type
Triaxial Cable	4.8/1.0 EFTXF	FUJIKURA		Triaxial Cable
	9.6/2.2 EFTXF	FUJIKURA		4.8/1.0 EFTXF
	9267	BELDEN		9.6/2.2 EFTXF
	9232	BELDEN		9267
	1.0S/4.5S	FELTEN		9232
Coaxial Cable	1.4S/6.6S	FELTEN		1.0S/4.5S
	5C-2V	-----		1.4S/6.6S
	7C-2V	-----		Coaxial Cable
	10C-2V	-----		5C-2V
				7C-2V
				10C-2V

### ● Frequency allocation



## Specifications

- Power supply voltage  
 TU-Z3A/CX-Z3A J AC100V 50/60Hz  
 TU-Z3A/CX-Z3A AC117V 60Hz  
 TU-Z3AP/CX-ZA3P AC230V 50Hz
- Power consumption  
 130W approx. (AC operation, including Z-3000W/GM-51 and AUX POWER OUT 50W)  
 TU-Z3A :23W approx. (DC operation)
- Ambient Temperature  
 CX-Z3A :33W approx. (DC operation, including Z-3000W/GM-51)  
 Operating: TU-Z3A 0 to +40°C  
 CX-Z3A -10 to +45°C
- Dimensions  
 Storage: -20 to +60°C  
 TU-Z3A 212(W)×163(H)×381(D)mm  
 CX-Z3A 135(W)×196(H)×215(D)mm  
 TU-Z3A 9.0kg approx.  
 CX-Z3A 3.0kg approx.
- Mass

## Specifications

### Input output signals(TU-Z3A)

Input signals		
INTERCOM	-70dBm	XLR-5pin
B-BST (GEN LOCK)	B-BST 0.45Vp-p/75Ω(loop through)	BNC
RET-1	VS or VBS 1Vp-p/75Ω(loop through)	BNC
RET-2	VS or VBS 1Vp-p/75Ω(loop through)	BNC
PROMPT	VS or VBS 1Vp-p/75Ω(loop through)	BNC
D RET1 IN [Factory option]	D1(active through)/75Ω	BNC
D RET2 IN [Factory option]	D1(active through)/75Ω	BNC
COMMUNICATION		D-sub 15pin
INTERCOM	4wire:0dBm HIGH 2wire:0dBs or -15dBs 200Ω at 2W	
PGM	0dBm HIGH	
R/G TALLY	24V DC or Contact	
REMOTE1/RS-232C (switchable)	1.5Vp-p RS-232C	4pin D-sub 25pin
REMOTE2	1.5Vp-p	4pin
DC IN	DC 12V (DC +10.5V~+17V)	XLR-4pin

### Output signals

INTERCOM	0dBs MAX+15dB以上	XLR-5pin
ENCR OUT	VBS 1Vp-p/75Ω	BNC(X3)
COMPONENT/RGB (switchable)		BNC
R/Pt	R: 0.7Vp-p/75Ω Pr: 0.7Vp-p/75Ω (NTSC) 0.525Vp-p/75Ω (PAL)	
G/Y	G: 0.7Vp-p/75Ω	
B/Pb	Y: VS 1Vp-p/75Ω B: 0.7Vp-p/75Ω Pb: 0.7Vp-p/75Ω (NTSC) 0.525Vp-p/75Ω (PAL)	
DIGITAL OUT [Factory option]	D1/75Ω	BNC(X2)
D RET1 OUT [Factory option]	D1/75Ω	BNC
D RET2 OUT [Factory option]	D1/75Ω	BNC
PIX OUT (R, G, B, ENCR)	VS or VBS 1.0Vp-p/75Ω	BNC
WF OUT (R, G, B, ENCR, SUP, SEQ)	VS or VBS 1.0Vp-p/75Ω	BNC
MIC OUT 1	0dBm/600Ω	XLR-3pin
MIC OUT 2	0dBm/600Ω	XLR-3pin
COMMUNICATION		D-sub 15pin
INTERCOM	4wire:0dBm/600Ω 2wire:0dBs or -15dBs/200Ω	
TALLY OUT		D-sub 9pin
R/G TALLY	Contact	
W/N CONTROL	Contact	
REMOTE1/RS-232C (switchable)	1.5Vp-p RS-232C	4pin D-sub 25pin
REMOTE 2	1.5Vp-p	4pin

## Specifications

### ■ Input output signals(CX-Z3A)

Input signals	
Camera head	
Video signals (Y, Pb, Pr)	each 10bit digital
Control signals	1.5Vp-p
MIC-1	-20dBm
DC IN	DC 12V (DC +10.5V to +17V) XLR-4pin (Male)
MIC-2	-70, 60, 50, 40, 30, 20, 10, +4dBm XLR-3pin (Female)
INTERCOM (HEAD SET)	-70dBm XLR-5pin (Female)
VF AUX	6pin
Output signals	
Camera head	
AUX VIDEO	VS or VBS 1Vp-p/75Ω
GEN LOCK	B-BST 0.45Vp-p/75Ω
Control signals	1.5Vp-p
RET VIDEO	VS or VBS 1.0Vp-p/75Ω BNC
PROMPT VIDEO	VS or VBS 1.0Vp-p/75Ω BNC
INTERCOM (HEAD SET)	0dBs MAX+15dB XLR-5pin (Female)
SCRIPT	DC 12V/0.3A
AC 230V	AC 230V/50VA 5pin

### ■ Accessories

- Camera control panel
  - Base station internal/external dual type
  - External base station dedicated type
- Setup control unit
- D1 Digital interface
  - DI-Z3

## 3. DISASSEMBLY

- 1. Board Locations .....3-1
- 2. Unit removal and extension .....3-2