

3CCD Colour Remote Head Video Camera DXC-C33/P

Ideal for use in space-limited locations, the DXC-C33/P incorporates one of the smallest and lightest camera head units featuring a 1/3 type 3CCD.



In spite of its compact and lightweight camera head unit, this model inherits the superb picture quality of the DXC Series. Its horizontal resolution is 850 TV lines and the minimum sensitivity is 2000 lux at F8. Various features such as DynaLatitude™ and Partial Enhance functions are also included.

The DXC-C33/P is equipped with a DV output terminal, thanks to which, video signals can be recorded to i.LINK™ interface-equipped VTRs with no quality deterioration.

With excellent features and approval for medical applications, the DXC-C33/P is the right choice for medical fields and for other demanding applications such as research, broadcast, and industrial fields.

Features

- Small camera head
- High picture quality
- 10 bit DSP
- i.LINK interface (IEEE 1394)
- DynaLatitude
- Frame memory
- Partial Enhance
- RS-232C interface
- 2 Automatic Exposure areas reset
- External synchronisation (HD/VD, VBS)
- User-friendly control panel

What is IEEE 1394?

IEEE 1394 is a high-speed, non-proprietary, scalable digital serial bus that transports data at current rates of 100, 200 and 400 Mb/s. Its definition, development, compliance and application promotion are supported by more than 180 companies, grouped in the 1394 Trade Association (www.1394ta.org).

This standard has been adopted both in the consumer and industrial world with various formats known as DV, DVCAM and D-CAM, because of its simplicity of use, its high speed and universal cable connection.

The Sony DXC-C33/P fully supports the DVCAM format.

Particularly, DVCAM provides superb picture quality from component digital recording. By using a wider track pitch, Sony ensures outstanding performance and higher reliability with DVCAM.

For more information about i.LINK interface and about DV, IIDC, and DVCAM protocols, please visit www.sonybiz.net.

For more information about other DVCAM compliant Sony products, please visit www.sonybiz.net/professionalvideo.

• **i.LINK Interface (IEEE 1394)**
 The i.LINK interface allows image recording into i.LINK interface-equipped VTRs with no quality deterioration. Sony guarantees the connection to any DVCAM compliant peripheral. Although possible, the connection to DV compliant peripherals might not be supported in certain software configurations* of the host computer.

i.LINK stands for the IEEE 1394-1995 compliant interface used in consumer areas with a DV stream.

* Please contact your local Sony sales office for the latest information about software compatibility.



i.LINK: DSR-70A/P and DXC-C33/P

• **Small Camera Head**

The DXC-C33/P can be installed in space-limited locations. The size of the camera head (CHU) is one of the smallest of all 1/3 type 3CCD cameras. It measures just 32 (W) x 38 (H) x 40 (D) mm and weighs only 48 g.

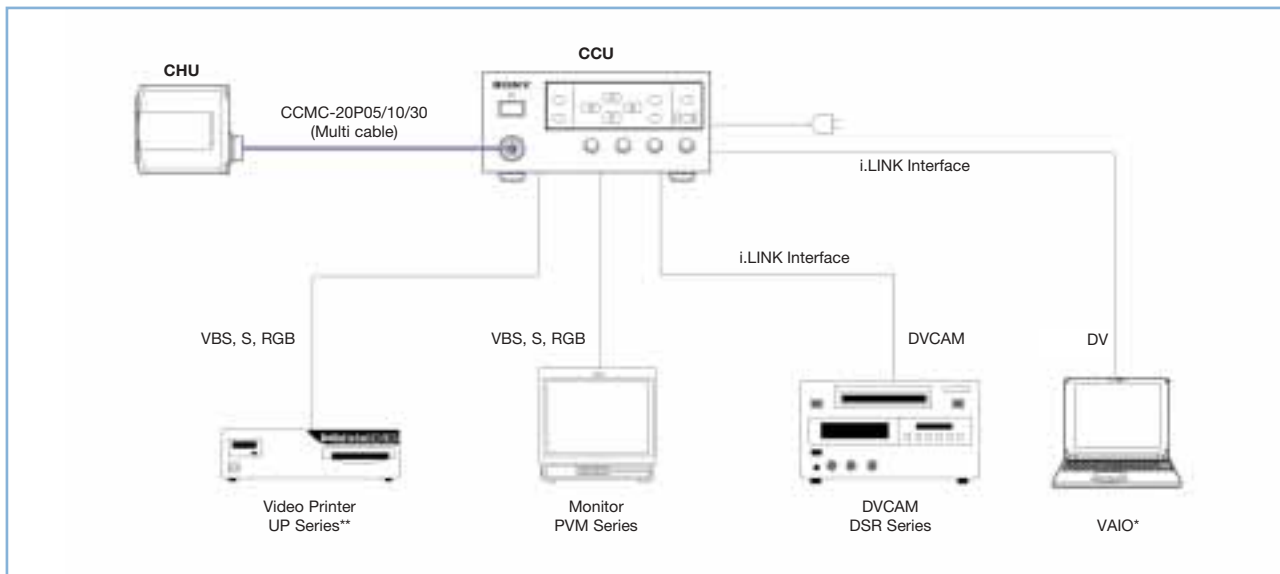
• **High Picture Quality**

The DXC-C33/P can clearly capture detailed images of objects. The 1/3 type 3CCD allows the camera to realize 2000 lux at F8, S/N ratio of 62dB (NTSC) or 61dB (PAL) and achieve a horizontal resolution of 850 TV lines.

• **10 Bit DSP**

The DXC-C33/P captures superior pictures by adopting full 10 bit Digital Signal Processing (DSP).

Typical System



* See above paragraph on i.LINK interface.

** Supported depending on the computer software configuration.



DynaLatitude OFF



DynaLatitude ON
(Simulated picture)



Frame memory
Gain: 18 dB



Frame memory
Long Exposure: 32 frames

• DynaLatitude

Automatically adjusts contrast corresponding to the brightness signal level of the entire image. Clear images can be captured even if both bright and dark areas exist within an image.

• Partial Enhance

Allows a particular colour to be selected, and its hue, saturation and detail altered. In addition, the detail produced by the high resolution of the camera can be softened or emphasised in certain parts of the image by the Partial Enhance function.

• RS-232C Interface

Easy control and operation of all the camera functions by an external computer is possible.

• Remote Head Feature

Using the especially designed CCMC-20P05/10/30 (5, 10 and 30 metre) cables, the camera head can be remotod up to 30 metres away from the camera control unit. With the automatic cable compensator built in the camera control unit, the picture remains unchanged. This feature is especially useful for surgical and broadcast applications.

• External Synchronisation (HD/VD, VBS)

Allows for multiple camera operation, as well as external triggering for industrial applications.

• Frame Memory

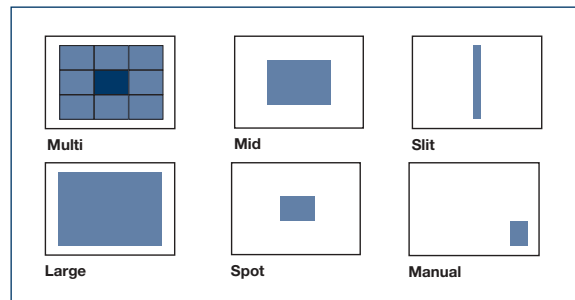
Built-in frame memory can provide a freeze image and a remarkably enhanced image in sensitivity by long-time exposure function.

• User-Friendly Control Panel

The front panel is easy to use with smartly arranged controls and good-sized switches.

• 2 AE Areas Preset

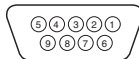
The AE (Automatic Exposure) function is very useful for determining the best area for incoming light metering. Users can select and set up two of the six different AE modes and can easily switch them on the front panel.



Pin assignment

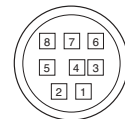
9-pin D-sub connector

| MENU | D-sub VIDEO: VBS D-sub SYNC: C.SYNC | D-sub VIDEO: VBS D-sub SYNC: WEN | D-sub VIDEO: Y/C D-sub SYNC: C.SYNC | D-sub VIDEO: Y/C D-sub SYNC: WEN |
|------|--|-------------------------------------|--|-------------------------------------|
| 1 | VBS OUT (G) | VBS OUT (G) | Y/C OUT (G) | Y/C OUT (G) |
| 2 | RGB OUT (G) | RGB OUT (G) | RGB OUT (G) | RGB OUT (G) |
| 3 | R OUT (X) | R OUT (X) | R OUT (X) | R OUT (X) |
| 4 | G OUT (X) | G OUT (X) | G OUT (X) | G OUT (X) |
| 5 | B OUT (X) | B OUT (X) | B OUT (X) | B OUT (X) |
| 6 | VBS OUT (X) | VBS OUT (X) | Y OUT (X) | Y OUT (X) |
| 7 | C.SYNC OUT (X) | WEN OUT (X) | C.SYNC OUT (X) | WEN OUT (X) |
| 8 | C.SYNC OUT (G) | WEN OUT (G) | C.SYNC OUT (G) | WEN OUT (G) |
| 9 | (X) | (X) | C OUT (X) | C OUT (X) |



MINI DIN 8-pin connector

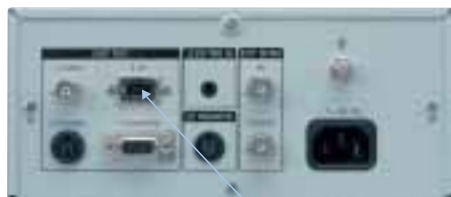
| | |
|---|---------------|
| 1 | INTER CONNECT |
| 2 | INTER CONNECT |
| 3 | DATA OUT |
| 4 | DC OUT (G) |
| 5 | DATA IN |
| 6 | NC |
| 7 | DC OUT (+) |
| 8 | NC |



Rear view



DXC-C33/P CHU



DXC-C33/P CCU

i.LINK connector

Control panel



DXC-C33/P CCU

Specifications

| | |
|----------------------------|--|
| Pick-up device | 1/3 type IT (Interline Transfer) CCD |
| Effective picture elements | NTSC: 768 (H) x 494 (V) PAL: 752 (H) x 582 (V) |
| Sensing area | 4.8 (H) x 3.6 (V) mm |
| Scanning system | NTSC: 2:1 interlaced, 525 lines PAL: 2:1 interlaced, 625 lines |
| Horizontal frequency | NTSC: 15.734 kHz PAL: 15.625 kHz |
| Vertical frequency | NTSC: 59.94 Hz PAL: 50 Hz |
| Sync system | Internal or External with VBS or HD/VD |
| Phase control | H/SC phase control |
| Horizontal resolution | 850 TV lines |
| Lens mount | C mount |
| Flange back | 17.526 mm in air |
| Sensitivity | F8.0 at 2000 lux (3200 K) |
| Minimum illumination | 4 lux (F2, GAIN: HYPER) |
| S/N ratio | NTSC: 62 dB (Typical) PAL: 61 dB (Typical) |
| Gain | STEP/AGC/HYPER selectable STEP: 0 to 24 dB by 1 dB step AGC: 0 to 24 dB (Limit value: 6 dB, 12 dB, 18 dB, 24 dB selectable), HYPER: 30 dB |
| Electronic shutter | 8.0 to 1/100,000 s |
| Lens | Manual Iris |
| AE area | Multi/Large/Medium/Spot/Slit/ Manual selectable |
| AE level | Variable |
| AE speed | Fast/Mid/Slow selectable |
| AE detect | Average/Peak selectable |
| Contrast Effect | Manual/DynaLatitude/DCC+ selectable |
| Knee Point | High/Normal/Low selectable (Contrast Effect: Manual) |
| Black stretch | Variable (Contrast Effect: Manual) |
| Gamma | ON/OFF (Variable at ON) |
| Pedestal | Master and R/B Manual adjustable |
| Black balance | ABB |
| White balance | AWB/ATW NORMAL/ATW WIDE/MANUAL/3200 K/5600 K selectable AWB or ATW R/B Paint, MANUAL R/B Gain |
| ATW area | NORMAL/ MANUAL selectable |
| ATW speed | FAST/ NORMAL/ SLOW selectable |

| | |
|-----------------------|---|
| Detail level | ALL/ TARGET/ OFF (Variable at ALL or TARGET) |
| Detail Frequency | HIGH/MID/LOW selectable |
| Linear matrix | ALL/TARGET/OFF |
| Linear matrix MODE | STANDARD/R Enhance/G Enhance/ B Enhance/Manual selectable |
| Partial Enhance | ALL/IN/OUT selectable |
| CCD integration mode | FIELD/ FRAME selectable |
| Shading Compensation | OFF/ON (Manual control) |
| Trigger Polarity | Positive edge trigger/Negative edge trigger selectable |
| Baud rate | 19200/9600/4800/2400/1200 selectable |
| Sync | RGB/G/OFF selectable |
| Strobe | Slave |
| User File | A/B switchable (Two pattern memories) |
| Scene File | STANDARD/MICROSCOPE/ FULL AUTO/STROBE/FILE A or B |
| Output signal | i.LINK: IEEE 1394 Based VBS: 1.0 Vp-p, 75 Ω, sync negative RGB: 0.7 Vp-p, 75 Ω, sync switchable SYNC: 2 Vp-p, 75 Ω Y: 1.0 Vp-p, 75 Ω C: NTSC 0.286 VP-P, 75 Ω, without sync PAL 0.3 Vp-p, 75 Ω, without sync |
| Operating temperature | -5 to 45°C (23 to 113°F) |
| Storage temperature | -20 to 60°C (-4 to 140°F) |
| Power supply | 100 to 240 V AC, 50/60 Hz |
| Power consumption | Max. 18 W |
| Dimensions | CHU: 32 (W) x 38 (H) x 40 (D) mm (1 1/8 x 1 1/2 x 1 1/8 inches) CCU: 200 (W) x 88 (H) x 242 (D) mm (7 7/8 x 3 1/2 x 9 5/8 inches) |
| Weight | CHU: 48 g (1.7 oz) CCU: 2.5kg (5 lbs 8 oz) |
| Connectors | DV OUT (6 pin jack) RGB/SYNC (9 pin D-sub) VIDEO OUT (BNC) S-VIDEO (4 pin mini DIN) FS/ TRIG IN (Stereo Mini jack) REMOTE (8 pin mini DIN) AC Inlet Camera (20 pin) |

Optional accessories



VCL-08WM
VCL-16WM
VCL-25WM
Optional lenses



DSR-70A/P
Portable Editing
Recorder



DVCAM Series
DSR-20MD/P



RM-C950
Remote Control Unit

VMC-IL6645 6-6 pin IEEE 1394 cable

VMC-IL4615/IL4635 i.LINK Cable (1.5/3.5 m)
4 to 6 pin cable for Sony VAIO laptop computer
connection

CCMC-20P05/20P10/20P30
20-pin Multi Cable (5/10/30 m). This cable is for
use between the camera head and the control unit.

CCMC-9DS 9-pin D-sub Cable

CCXC-9DB/9DD 9-pin D-sub Cable

Sony Contacts

| | |
|---|----------------------|
| ISS for Central Zone (Austria, Eastern Europe, Germany, Netherlands, German-speaking Switzerland) | +49 221 537 3668 |
| ISS for Nordic Zone (Baltics, Denmark, Finland, Norway, Sweden) | +45 43 557 067 |
| ISS for Other Zone (UK, Ireland, Greece, Israel, South Africa) | +44 1932 816 315 |
| ISS for South Zone (Belgium, France, Portugal, Spain, French-speaking Switzerland) | +33 1 55 90 40 74 |
| ISS for Italy | +39 (0) 6 334 372 27 |



DXC-C33P

3 CCD small-sized remote head type camera

The Ideal camera for space-limited applications such as medical, research and industrial fields

The Sony DXC-C33/C33P incorporates a DV output terminal which allows the camera to output images by DV format. A DV output terminal is first introduced to the DXC Series, and also first to this type of cameras.

In spite of its compact body, this model inherits superb picture quality of the DXC Series. Its horizontal resolution is 800 TV lines and the minimum illumination is 2000 lux at F8. Also, various features such as Dynalatitude function, Partial enhance are provided to this model. The camera head can be remotod up to 30 meters from the camera control unit.

The DXC-C33/C33P also has medical approval.

Features

Camera head Dimensions

The size of the camera head is the smallest of the 1/3 type 3CCD-class cameras. Dimensions are : 32x38x40

Outstanding Picture quality

Adoption of 1/3 type 3CCD allows the camera to realize 2000 lux at F8, S/N ratio 62 dB and achieve a horizontal resolution of 800 TV lines.

Dynalatitude function

Automatically adjusts contrast corresponding to the brightness signal level of the entire image.

Partial enhance

Allows a particular color to be selected, and its hue, saturation and detail altered.

10 bit DSP

Capturing superior pictures by adopting full Digital Signal Processing (DSP) due to the optimized digital signal processing, sharpness of the picture has been further improved.

HD/VD and VBS synchronization capability

External triggering (Vertical, horizontal and VBS) capability for synchro flash or multi camera operation

I-link compatibility

The user can digitally transfert mages without alteration to an I-link peripheral like a recorder or a computer.

C mount

The camera head can be equipped with industrial and medical C-mont lenses available form various manufacturers.

Benefits

Ultra small 3CCD camera head

Can be installed in space-limited locations or surgical microscopes and slit lamps

High color reproduction

The 3CCD camera head allows capture of detailed images of objects with 800 TV lines resolution

Digital interface : DV out

Video signals can be recorded to i.LINK interface-equipped VTR with no quality deterioration.

Head remotable from camera control unit

With dedicated cable, the camera head can be re-moted up to 30 meters distance.

Dynalatitude function

Clear images can be captured if both bright and dark areas exist within an image.

Frame memory capability

Built-in frame memory can provide a freeze image and a remarkable enhancement in sensitivity

Partial enhance

Some designated part or color can be softened or emphasized.

RS-232C interface

All functions can be easily controlled by external computer or with the optional RM-C950 remote control panel

External synchronization

Allows for multiple camera operation and triggering for industrial applications.

Technical Specifications

| | |
|----------------------------|---|
| Image device | 1/3 type IT (Interline Transfer) CCD |
| Sensing area | 4.8 (H) x 3.6 (V) mm |
| Scanning system | 2:1 interlaced, 625 lines |
| Effective picture elements | 752(H) x 582(V) |
| Horizontal frequency | PAL:15.625kHz |
| Vertical frequency | PAL:50Hz |
| Sync system | Internal or External with VBS or HD/VD |
| Phase control | H/ SC phase control |
| Horizontal resolution | 850TV lines |
| Lens mount | C mount |
| Flange back | 17.526mm in air |
| Sensitivity | F8.0 at 2000lux(3200K) |
| Minimum illumination | 4lux (F2, GAIN:HYPER) |
| S/N ratio: | PAL:61 dB (Typical) |
| Gain | STEP/ AGC/ HYPER selectable STEP: 0~24dB by 1dB step AGC: 0~24dB (Limit value: 6dB, 12dB, 18dB, 24dB selectable) HYPER: 30dB |
| Electronic shutter | OFF/ STEP/ VARIABLE/ CCD IRIS/ KNOB selectable OFF (NTSC:1/60s, PAL:1/50s) STEP: OFF (NTSC:1/60s, PAL:1/50s), FL(NTSC:1/100s, PAL:1/120s), 1/125s, 1/250s, 1/500s, 1/1000s, 1/2000s, 1/4000s, 1/10000s, 1/20000s, 1/40000s, 1/100000s, 0.1s, 0.2s, 0.3s, 0.5s, 1.0s, 1.5s, 2.0s, 2.5s, 3.0s, 3.5s, 4.0s, 5.0s, 6.0s, 7.0s, 8.0s VARIABLE: in high-speed mode PAL: 310/625 to 1/625H, OFF in low-speed mode 254 to 1 frames for field mode 255 to 2 frames for frame mode CCD IRIS: 1/60s~1/100000s (Limit value: 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/20000, 1/40000, 1/100000 variable) |
| Lens | Manual Iris |
| AE area | Multi/ Large/ Medium/ Spot/ Slit/ Manual selectable |
| AE level | Variable |
| AE speed | Fast/ Mid/ Slow selectable |
| AE detect | Average/ Peak selectable |
| Contrast Effect | Manual/ DynaLatitude/ DCC+ selectable |
| Knee Point | High/ Normal/ Low selectable (Contrast Effect: Manual) |
| Black stretch | Variable (Contrast Effect: Manual) |
| Gamma | ON/ OFF (Variable at ON) |
| Pedestal | Master and R/B Manual adjustable |
| Black balance | ABB |
| White balance | AWB/ ATW NORMAL/ ATW WIDE/ MANUAL/ 3200K/ 5600K selectable AWB or ATW R/B Paint, MANUAL R/B Gain |

| | |
|-----------------------|---|
| ATW area | NORMAL/ MANU selectable |
| ATW speed | FAST/ NORMAL/ SLOW selectable |
| Detail level | ALL/ TARGET/ OFF (Variable at ALL or TARGET) |
| Detail Frequency | HIGH/ MID/ LOW selectable |
| Linear matrix | ALL/ TARGET/ OFF |
| Linear matrix MODE | STANDARD/ R Enhance/ G Enhance/ B Enhance/ Manual selectable |
| Partial Enhance | ALL/ IN/ OUT selectable |
| CCD integration mode | FIELD/ FRAME selectable |
| Shading Compensation | OFF / ON (Manual control) |
| Trigger Polarity | Positive edge trigger / Negative edge trigger selectable |
| Baud rate | 19200/ 9600/ 4800/ 2400/ 1200 selectable |
| Sync | RGB/ G/ OFF selectable |
| Strobe | Slave |
| User File | A/ B switchable (Two pattern memories) |
| Scene File | STANDARD/ MICROSCOPE/ FULL AUTO/ STROBE/FILE A or B |
| Output signal | i.LINK (DV): conforms to IEEE1394-1995 VBS: 1.0Vp-p, 75 ohm, sync negative RGB: 0.7Vp-p, 75 ohm, sync switchable SYNC: 2Vp-p, 75 ohm Y: 1.0Vp-p, 75 ohm C: PAL 0.3Vp-p, 75 ohm, without sync |
| Operating temperature | -5°C to 45°C |
| Storage temperature- | 20°C to 60°C |
| Power supply | 100-240V AC, 50/60Hz |
| Power consumption | Max. 18W |
| Dimensions | CHU: 32 (W) x 38 (H) x 40 (D) mm CCU: 200 (W) x 88 (H) x 247 (D) mm |
| Weight | CHU: 48g CCU: 2.5kg |
| Connectors | DV OUT (6 pin connector) RGB/SYNC (9 pin D-sub) VIDEO OUT (BNC) S-VIDEO (4 pin mini DIN) FS/ TRIG IN (Stereo Mini jack) REMOTE (8 pin mini DIN) AC Inlet Camera (20 pin) |

Supplied Accessories

- Operation instruction manual
- Panel sheet for RMC-950
- Lens cap
- Plug adaptor
- AC power cable
- Tripod adaptor