

I/F Processors Others

PFA-D100	142	BKSI-PS80	158
DIGITAL AUDIO DISTRIBUTION AMPLIFIER		BACKUP POWER SUPPLY UNIT	
DAF-1500	144	DFX-1201/1200P	160
DIGITAL AUDIO CONVERTER UNIT		DIGITAL RATE CONVERTER	
DABK-1510	146	DFX-2101	162
VIDEO CLOCK BOARD		DIGITAL RATE CONVERTER	
DABK-1511	146	BKDV-4224AD/4224DA	164
A TO D CONVERTER BOARD		D-1 SIGNAL CONVERTER	
DABK-1512	146	DVPC-4224	166
D TO A CONVERTER BOARD		DIGITAL SIGNAL PROCESSOR	
DABK-1513	146	DFX-C2/C2P	168
ID INSERTER BOARD		COMPONENT ADAPTER	
DABK-1514	147		
SAMPLING RATE CONVERTER BOARD			
DABK-1515	147		
WORD SYNC DISTRIBUTION BOARD			
DABK-1517	147		
BACKUP POWER SUPPLY UNIT			
DDU-2100	148		
DIGITAL AUDIO DELAY UNIT			
SIU-80	150		
SYSTEM INTERFACE UNIT			
BKSI-2010	152		
DISK CONTROLLER BOARD			
BKSI-2011	152		
DISK CONTROLLER MEMORY BOARD			
BKSI-2020	153		
BIT RATE REDUCTION ENCODER BOARD			
BKSI-2030	153		
BIT RATE REDUCTION DECODER BOARD			
BKSI-2040	154		
INTELLIGENT DEVICE CONTROLLER (IDC) CPU BOARD			
BKSI-2041	154		
IDC SERIAL LINK BOARD			
BKSI-2042	155		
IDC SERIAL I/F CONNECTOR BOARD			
BKSI-2043	155		
IDC PARALLEL I/F CONNECTOR BOARD			
BKSI-2044	156		
IDC S-BUS/VS-BUS I/F CONNECTOR BOARD			
BKSI-2050/2050P	156		
VIDEO A TO D CONVERTER BOARD			
BKSI-2060/2060P	157		
VIDEO D TO A CONVERTER BOARD			
BKSI-2070	157		
AUDIO A TO D CONVERTER BOARD			
BKSI-2080	158		
AUDIO D TO A CONVERTER BOARD			



Features

- ◆ **Configurable distribution of AES/EBU signals**
- ◆ **Optional backup power supply**

Overview

The PFA-D100 digital audio distribution amplifier has four distribution blocks, each of which distributes an AES/EBU format digital audio signal to six outputs. These blocks can be configured to provide any one of the following input/output arrangements:

- 1 in/6 out x4
- 1 in/6 out x2, plus 1 in/12 out x1
- 1 in/12 out x2
- 1 in/18 out, plus 1 in/6 out x1
- 1 in/24 out x1

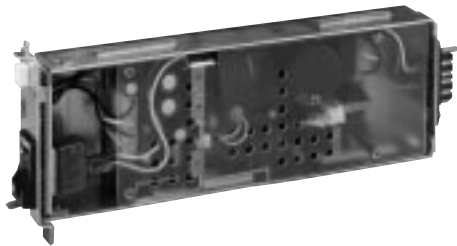
Output signals can be locked to any of the input signals, or to an external 525/625 component video signal. Input signals can be re-clocked to reduce jitter.

For critical applications, a BKPF-A100 backup power supply unit can be installed. The PFA-D100 mounts into a standard 19-inch rack and is 2U high.

BKPF-A100 BACKUP POWER SUPPLY UNIT

Overview

The BKPF-A100 is an optional backup power supply unit for installation in a PFA-D100 digital audio distribution amplifier. It operates in parallel with the main PSU so that, if this fails, the BKPF-A100 continues to supply DC power. AC power to the BKPF-A100 is fed through a separate connector, so that the main and backup power supply units can be powered from different AC power sources for critical applications.



I/F Processors Others

DIGITAL AUDIO DISTRIBUTION AMPLIFIER



Rear Panel

Specifications

Inputs/outputs

Digital audio inputs	AES/EBU (XLR-3-31 type) (4)
Digital audio outputs	AES/EBU (XLR-3-32 type) (24)
Reference video inputs	REF IN connectors (BNC type) (2) NTSC color, NTSC B/W, PAL 1.0 V _{p-p} (composite video) 75 Ω termination, with loop-through output
Status output	D-sub 25-pin (HIGH active, TTL level)

General

Power requirements	AC 100 to 240 V, 50/60 Hz
Power consumption	18 W, 0.5 A
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Dimensions	424 x 88 x 350 mm (16 3/4 x 3 1/2 x 13 7/8 inches) (w/h/d)
Mass	7 kg (15 lb 7 oz)

Supplied accessories

AC power cord (1)
75 Ω terminator (1)
Plug holder (1)
Operation manual (1)
Maintenance manual (1)

Ordering Information

- * PFA-D100 Digital Audio Distribution Amplifier
- * BKPF-A100 Backup Power Supply Unit



Features

- ◆ Accommodates and powers up to eight optional DABK Series boards
- ◆ Provides D/A, A/D and sampling rate conversion with appropriate option boards
- ◆ Self-diagnostics function
- ◆ Optional backup power supply

Overview

The DAF-1500 digital audio converter unit accommodates and powers up to eight DABK Series boards.

A word clock and AES/EBU DI sync board is fitted as standard, but this can be replaced by an optional DABK-1510 video sync board if required. An optional backup power supply board, the DABK-1517, is available for critical applications.

The DAF-1500 mounts into a standard 19-inch rack and is 3U high.

DIGITAL AUDIO CONVERTER UNIT



Rear Panel

Specifications

Inputs/outputs

Analog input/output	XLR 3-pin (16) Reference level: +4 dBu (-10 to +8 dB, variable) Maximum level: +24 dBu Input impedance: 10 k Ω or more, selectable Output impedance: 50 Ω or less
Load impedance	600 Ω
Headroom	20 dB
Digital input/output	XLR 3-pin (8) AES/EBU format
Impedance	110 Ω , with transformer
Word sync	TTL compatible, 75 Ω BNC, loop-through
AES/EBU sync	XLR-3-31 type/XLR-3-32 type, buffered through

Audio Characteristics (when holding four DABK-1511 and four DABK-1512 boards)

Frequency response	20 Hz to 20 kHz +0.5/-0.7 dB at 1 kHz standard
T.H.D.	0.05% or less at 20 Hz to 20 kHz reference level and 80 kHz bandwidth
Signal-to-noise ratio	100 dB or more at maximum level and 30 kHz bandwidth
Crosstalk	70 dB or more
Emphasis	50 μ s/15 μ s (switchable between ON and OFF)
Decoding delay	3 ms or less at 48 kHz
Channel phase	Within 5°

General

Power requirement	AC 100 to 240 V, 50/60 Hz
Power consumption	AC 150 VA maximum
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Dimensions	424 x 133 x 350 mm (16 ³ / ₄ x 5 ¹ / ₄ x 13 ⁷ / ₈ inches) (w/h/d)
Mass	1.5 kg (25 lb 7 oz) maximum

Supplied accessories

19-inch rack mount adaptor (1)
AC power cable (1)
Operation manual (1)
Maintenance manual (1)

Ordering Information

- * DAF-1500 Digital Audio Converter Unit
- * DABK-1510 Video Sync Board
- * DABK-1511 A to D Converter Board
- * DABK-1512 D to A Converter Board
- * DABK-1513 ID Inserter Board
- * DABK-1514 Sampling Rate Converter Board
- * DABK-1515 Word Sync Distribution Board
- * DABK-1517 Backup Power Supply Unit
- * ECD-3C (3 m)/10C (10 m)/30C (30 m) XLR-3-pin–XLR-3-pin Digital Audio Interface Cable
- * RMM-30 Rack Mount Rail

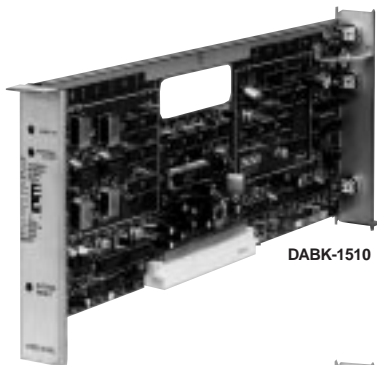
Features and specifications are subject to change without notice.

DABK-1510

VIDEO CLOCK BOARD

Overview

The DABK-1510 is a video clock board that locks DABK-1511 A to D converter board to a video reference signal. It also provides an internal locking signal when a video signal is not present. The DABK-1510 fits in place of the word/DI sync board supplied as standard with a DAF-1500.



DABK-1510

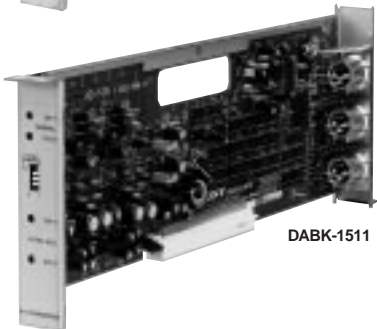
DABK-1511

A TO D CONVERTER BOARD

Overview

The DABK-1511 is an A to D converter board that converts two analog audio signals into an AES/EBU digital audio signal at a 20-bit sampling rate. The sampling frequency is selectable to 48 kHz, 47.952 kHz, 44.1 kHz or 44.056 kHz.

The analog audio inputs are balanced.



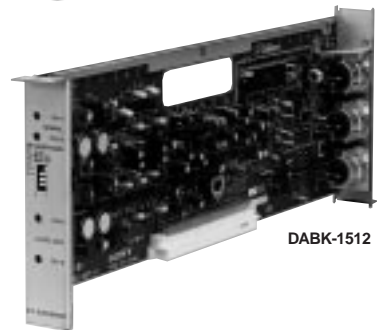
DABK-1511

DABK-1512

D TO A CONVERTER BOARD

Overview

The DABK-1512 is a D to A converter board that converts an AES/EBU digital audio signal into two analog audio signals. Input signals with a sampling frequency of 48 kHz, 47.952 kHz, 44.1 kHz or 44.056 kHz are accepted. The audio outputs are balanced.



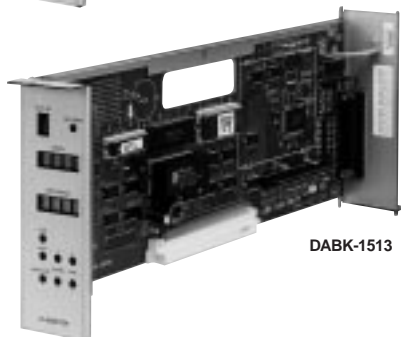
DABK-1512

DABK-1513

ID INSERTER BOARD

Overview

The DABK-1513 is an ID inserter board for the management of AES/EBU source information input via an RS-232C connector. It inserts ID code into the C-bit status of the AES/EBU format digital audio signal from up to eight DABK-1511 A to D converter boards or DABK-1514 sampling rate converter boards.



DABK-1513

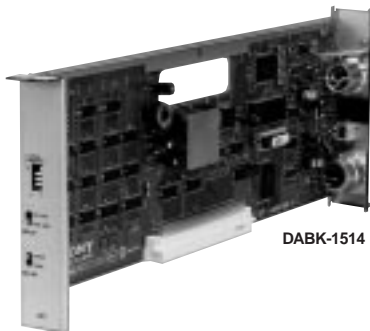
DIGITAL AUDIO CONVERTER UNIT

DABK-1514

SAMPLING RATE CONVERTER BOARD

Overview

The DABK-1514 sampling rate converter board converts the sampling frequency of an AES/EBU or IEC-958 Type II digital audio signal. It is capable of converting any sampling frequency between 22.03 kHz and 64 kHz, to 48 kHz, 47.952 kHz, 44.1 kHz or 44.056 kHz.



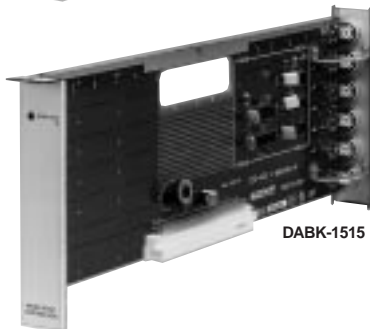
DABK-1514

DABK-1515

WORD SYNC DISTRIBUTION BOARD

Overview

The DABK-1515 word sync distribution board accepts a word sync signal via a looped input and distributes this signal to four outputs.



DABK-1515

DABK-1517

BACKUP POWER SUPPLY UNIT

Overview

The DABK-1517 is a backup power supply unit that supplies DC power to a DAF-1500 audio converter unit if there is a problem with its power supply block.

The DABK-1517 connects to the DC input connector of the DAF-1500 via a supplied 0.7 m cable. The DABK-1517 mounts into a standard 19-inch rack and is 1U high.



DABK-1517



Features

- ◆ Provides an adjustable delay to four AES/EBU digital audio signals
- ◆ Accepts a wide range of signal sampling frequencies

Overview

The DDU-2100 digital audio delay unit applies a time delay to up to four AES/EBU signals and an SMPTE/EBU time code signal. A typical application is to maintain synchronization between audio signals and associated video signals that are delayed as they pass through digital processing or recording equipment.

Maximum delay time is 8.5 fields (in 0.1 field steps) or 170 ms (in 2.0 ms steps) or 8100 samples (in 100 sample steps). Input signals with a sampling rate of 48 kHz, 44.1 kHz, 44.056 kHz or 32 kHz are accepted.

The DDU-2100 mounts in a standard 19-inch rack and is 1U high.

DIGITAL AUDIO DELAY UNIT



Rear Panel

Specifications

Inputs/outputs

AES/EBU input	XLR 3-pin (4) 3 to 10 Vp-p, 110 Ω , balanced
AES/EBU output	XLR 3-pin (4) 3 Vp-p, 110 Ω , balanced
LTC input	0.5 to 18 Vp-p, 10 k Ω , balanced
LTC output	XLR 3-pin (1), 2.4 Vp-p, 600 Ω , balanced

Signal characteristics

Sampling frequency	48 kHz/44.1 kHz/44.056 kHz/32 kHz selectable
Time code	SMPTE/EBU time code input/output
Control accuracy	AES/EBU format digital audio signal: -0 to +8 μ s (at 32 kHz) LTC signal: -0 to +50 μ s
Maximum delay range	8.5 fields/170 ms/8100 samples

General

Power requirements	100 to 120 V AC (USA/Canada) 220 to 240 V AC (Europe)
Power consumption	15 W
Dimensions	424 x 44 x 330 mm (16 ³ / ₄ x 1 ³ / ₄ x 13 inches) (w/h/d)
Mass	3.5 kg (7 lb 1 oz)

Supplied Accessories

AC power cord (1)
Plug holder (1)
Rack mount bracket (1)
Operation and maintenance manual (1)

Ordering Information

- * DDU-2100 Digital Audio Delay Unit
- * ECD-3C (3 m)/10C (10 m)/30C (30 m) XLR-3-pin—XLR-3-pin Digital Audio Interface Cable



Features

- ◆ Provides the core signal processing and control functions for a server system
- ◆ Accommodates and powers up to eight BKSI Series boards
- ◆ Optional backup power supply
- ◆ Optional VS-BUS operation
- ◆ Built-in time code reader
- ◆ Supports ISR

Overview

The SIU-80 is a system interface unit for the BKSI Series of signal processing and control boards. Installed in an SIU-80 interface unit, the appropriate combination of boards forms the core of an A/V server system, based on the Sony MAV-S100/S110 and MAV-500 servers.

With an optional BKSI-2040 IDC CPU board fitted, other installed BKSI Series boards can be controlled via VS-BUS.

An optional backup power supply unit, the BKSI-PS80 is available for critical applications.

The SIU-80 mounts into a standard 19-inch rack and is 6U high.

SYSTEM INTERFACE UNIT



Specifications

Inputs/outputs

Reference video input	REF IN connectors (BNC type) (2, one for loop-through) NTSC/PAL composite video signal: 1.0 Vp-p, 75 Ω or Black burst signal Sync, Burst: 0.3 Vp-p, 75 Ω
Time code input	TC IN connectors (XLR 3-pin) (2, female and male, one for loop-through)
VS bus input/output	VS BUS IN/OUT connectors (BNC type) (2, loop-through) 1.3 ±0.3 Vp-p, 75 Ω
Remote	RS232C (D-sub 25-pin, female)

General

Power requirements	100 to 240 V AC, 50/60 Hz
Current consumption	5 A to 2 A (at maximum load)
Supplied current	1. +5 V DC: 47A 2. -5.2 V DC: 20A The sum of 1 and 2 must not exceed 52 A
Power factor	98% (at maximum load)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating humidity	10% to 90% (Condensation not allowed)

Ordering Information

- * SIU-80 System Interface Unit
- * BKSI-2010 Disk Controller Board
- * BKSI-2011 Disk Controller Memory Board
- * BKSI-2020 Bit Rate Reduction Encoder Board
- * BKSI-2030 Bit Rate Reduction Decoder Board
- * BKSI-2031 BRR Decoder Jog Kit
- * BKSI-2040 IDC CPU Board
- * BKSI-2041 IDC Serial Link Connector Board

Rear Panel

Mass	Approx. 18.5 kg (40 lb 12 oz) (excluding optional boards and units)
Dimensions	424 x 266 x 470 mm (w/h/d) (16 3/4 x 10 1/2 x 18 5/8 inches) (excluding protruding parts)

BKSI-PS80 Backup Power Supply Unit specifications

Power requirements	100 to 240 V AC, 50/60 Hz
Current consumption	5 A to 2 A (at maximum load)
Supplied current	1. +5 V DC: 47A 2. -5.2 V DC: 20A The sum of 1 and 2 must not exceed 52 A
Power factor	98% (at maximum load)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating humidity	10% to 90% (Condensation not allowed)
Mass	Approx. 4 kg (8 lb 13 oz)
Dimensions	50 x 240 x 330 mm (w/h/d) (2 x 9 1/2 x 13 inches) (excluding protruding parts)

Supplied accessories

- Rack mount angles (1)
- Installation manual (1)
- Operation manual (1)

- * BKSI-2042 IDC Serial I/F Connector Board
- * BKSI-2043 IDC Parallel I/F Connector Board
- * BKSI-2044 IDC S-BUS/VS-BUS I/F Connector Board
- * BKSI-2050/2050P Video A to D Converter Board
- * BKSI-2060/2060P Video D to A Converter Board
- * BKSI-2070 Audio A to D Converter Board
- * BKSI-2080 Audio D to A Converter Board
- * BKS-PS80 Backup Power Supply Unit

BKSI-2010 DISK CONTROLLER BOARD

Overview

The BKSI-2010 disk controller board converts SDDI (Serial Digital Data Interface) signals to SCSI format signals and outputs them to be recorded on HDD arrays. SCSI format playback signals from HDD arrays are converted back to SDDI format signals. As standard, the BKSI-2010 supports two BKSI-2030 bit rate reduction boards, which convert the SDDI output signal to SDI. Two RS-422A ports are provided to support control via the Sony 9-pin disk protocol. Up to eight MAV-S100/S110 HDD arrays can be controlled via a daisy-chain connection, providing up to 24 hours of recording



BKSI-2011 DISK CONTROLLER MEMORY BOARD

Overview

The BKSI-2011 disk controller memory board is a daughter board of the BKSI-2010 disk controller board. With the BKSI-2011 installed on the BKSI-2010, up to four outputs, or one input and three outputs can be controlled. The output signals are multiplexed into an SDDI signal.



I/F Processors Others

SYSTEM INTERFACE UNIT

BKSI-2020

BIT RATE REDUCTION ENCODER BOARD

Overview

The BKSI-2020 bit rate reduction encoder board accepts an SDI signal, two AES/EBU digital audio signals and a time code signal. The SDI signal is compressed and, together with the digital audio and time code signals, converted to an SDDI format signal and output.

- Video compression format: MPEG2 4:2:2P@ML
- Compression rate and GOP length: 18 Mbps, 2 Frame GOP
- Audio encoding: two, uncompressed AES/EBU signals (48 kHz, 16 bit)



BKSI-2030

BIT RATE REDUCTION DECODER BOARD

Overview

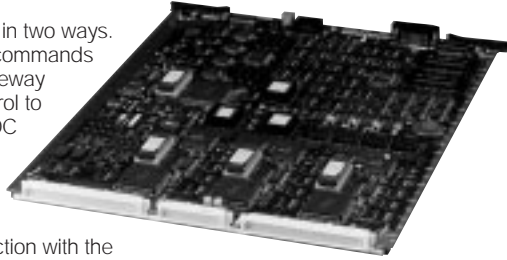
The BKSI-2030 bit rate reduction decoder board accepts an SDDI signal that combines compressed video with uncompressed AES/EBU audio and time code signals. It decodes and outputs these signals as an SDI signal which combines uncompressed video and audio signals. Three outputs of this SDI signal are provided. The two AES/EBU audio signals are also available on separate outputs, while a third AES/EBU output carries L/R channels selected from the four individual channels carried by the two AES/EBU signals. The time code signal is also output separately.

The BKSI-2031 BRR Decoder Jog Kit is attached to the BKSI-2030.

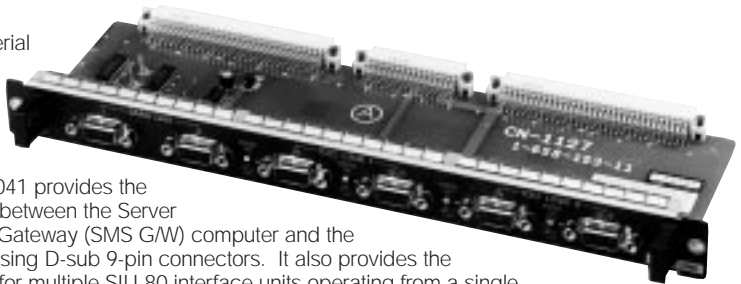


BKSI-2040**INTELLIGENT DEVICE CONTROLLER (IDC) CPU BOARD****Overview**

The BKSI-2040 IDC CPU board is used in two ways. As a root controller the board receives commands from a Server Management System Gateway (SMS/GW) computer and provides control to other BKSI-2040 boards used as sub-IDC boards within an SIU-80 interface unit. As a device controller (sub-IDC board) it provides control for servers, routers, VTRs and other remote devices. Each sub-IDC board must be used in conjunction with the appropriate connection board: BKSI-2041, BKSI-2042, BKSI-2043 and BKSI-2044.

**BKSI-2041****IDC SERIAL LINK CONNECTOR BOARD****Overview**

The BKSI-2041 IDC serial link connector board is used in conjunction with a BKSI-2040 IDC CPU board configured as a root IDC. The BKSI-2041 provides the interface connections between the Server Management System Gateway (SMS/GW) computer and the SIU-80 interface unit using D-sub 9-pin connectors. It also provides the interface connections for multiple SIU-80 interface units operating from a single SMS/GW.



SYSTEM INTERFACE UNIT

BKSI-2042

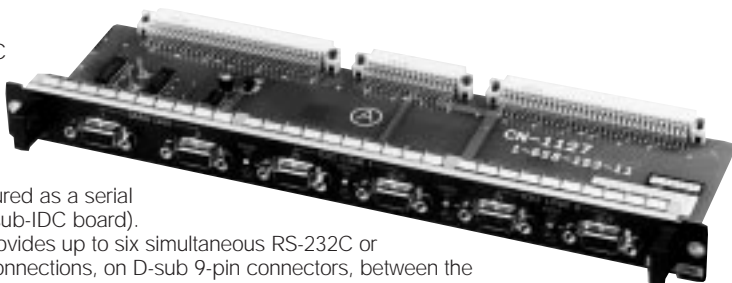
IDC SERIAL I/F CONNECTOR BOARD

Overview

The BKSI-2042 IDC serial interface connector board is used in conjunction with a BKSI-2040 IDC

CPU board configured as a serial device controller (sub-IDC board).

The BKSI-2042 provides up to six simultaneous RS-232C or RS-422A control connections, on D-sub 9-pin connectors, between the SIU-80 interface unit and remote devices.



BKSI-2043

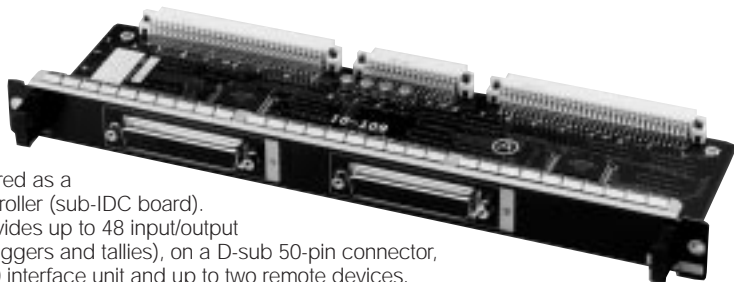
IDC PARALLEL I/F CONNECTOR BOARD

Overview

The BKSI-2043 IDC parallel interface connector board is used in conjunction with a BKSI-2040 IDC

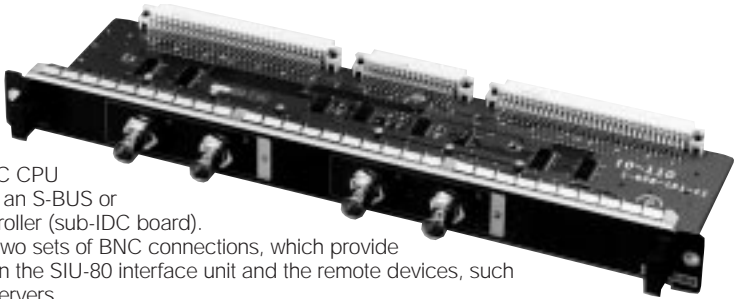
CPU board configured as a parallel device controller (sub-IDC board).

The BKSI-2043 provides up to 48 input/output connections (e.g. triggers and tallies), on a D-sub 50-pin connector, between the SIU-80 interface unit and up to two remote devices.

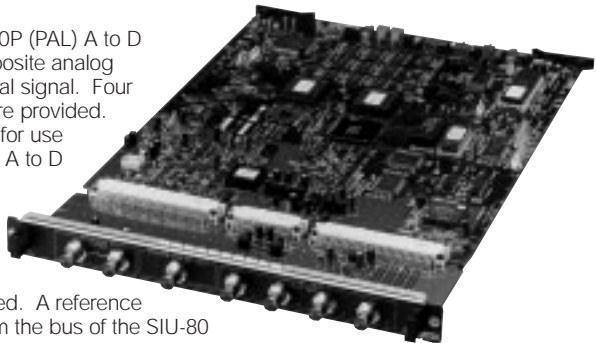


BKSI-2044**IDC S-BUS/VS-BUS I/F CONNECTOR BOARD****Overview**

The BKSI-2044 IDC S-BUS/VS-BUS interface connector board is used in conjunction with a BKSI-2040 IDC CPU board configured as an S-BUS or VS-BUS device controller (sub-IDC board). The BKSI-2044 has two sets of BNC connections, which provide the interface between the SIU-80 interface unit and the remote devices, such as routers or video servers.

**BKSI-2050/2050P****VIDEO A TO D CONVERTER BOARD****Overview**

The BKSI-2050 (NTSC)/BKSI-2050P (PAL) A to D converter board converts a composite analog signal to a component serial digital signal. Four outputs of the converted signal are provided. A frame pulse output is available for use with an optional BKSI-2070 audio A to D converter board. Internal adjustment of input level and output system phase is included. Frame synchronizer and video index insertion functions are incorporated. A reference video signal can be obtained from the bus of the SIU-80 system interface unit.



BKSI-2050

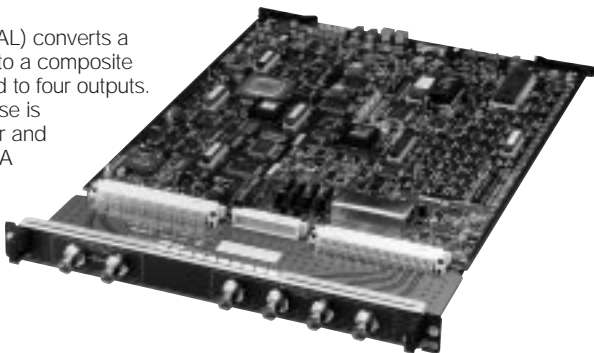


SYSTEM INTERFACE UNIT

BKSI-2060/2060P VIDEO D TO A CONVERTER BOARD

Overview

The BKSI-2060 (NTSC)/2060P (PAL) converts a component serial digital signal into a composite analog signal, which is distributed to four outputs. Adjustment of output system phase is provided, as are line synchronizer and video index detection functions. A reference video signal can be obtained from the bus of the SIU-80 system interface unit.



BKSI-2060

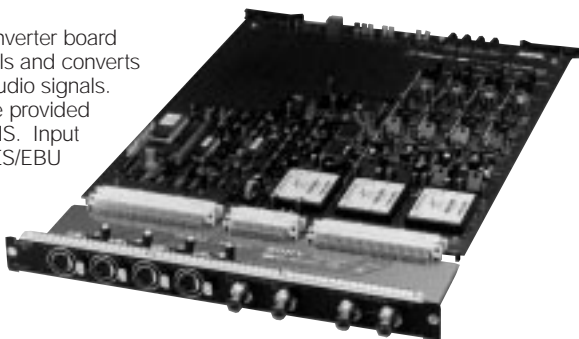


BKSI-2070 AUDIO A TO D CONVERTER BOARD

Overview

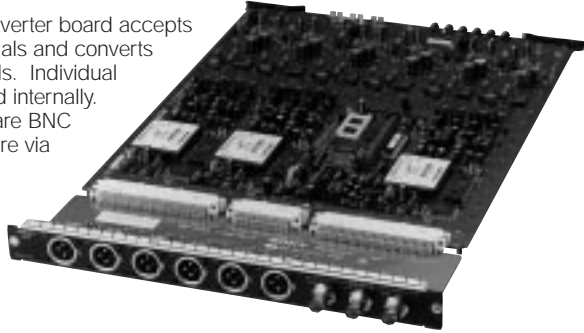
The BKSI-2070 Audio A to D converter board accepts four analog audio signals and converts them into two AES/EBU digital audio signals. Individual input level controls are provided internally, and externally via PCNS. Input connectors are XLR type, the AES/EBU output signals are via BNC type connectors.

A Frame Pulse input allows the BKSI-2070 to operate in synchronism with a video A to D converter, such as a BKSI-2050/2050P.



BKSI-2080**AUDIO D TO A CONVERTER BOARD****Overview**

The BKSI-2080 audio D to A converter board accepts three AES/EBU digital audio signals and converts them into six analog audio signals. Individual output level controls are provided internally. The AES/EBU input connectors are BNC type, the analog output signals are via XLR type connectors.

**BKSI-PS80****BACKUP POWER SUPPLY UNIT****Overview**

The BKSI-PS80 is an optional backup power supply for installation in an SIU-80 interface unit. It operates in parallel with the main PSU so that, if this fails, the BKSI-PS80 will continue to supply DC power to the SIU-80 and to installed BKSI Series boards.



SYSTEM INTERFACE UNIT

SONY DFX-1201/1200P



DFX-1201

Features

- ◆ Accepts a serial or parallel component digital video signal, and outputs it as both a serial and a parallel composite digital signal
- ◆ Accommodates four AES/EBU signals embedded in a serial digital signal
- ◆ Self-diagnosis

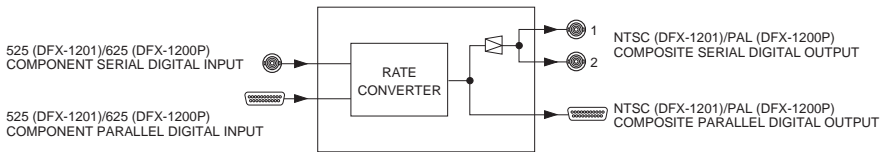
Overview

The DFX-1201 (525-line) and DFX-1200P (625-line) digital rate converters accept either a serial or parallel component digital signal. The input signal is converted into a composite digital signal and output in serial and parallel formats.

Up to four channels of digital audio embedded in a component serial digital input signal are transferred to the composite serial output signal.

The DFX-1201 and DFX-1200P mount in a standard 19-inch rack and are 2U high.

Block Diagram



DFX-1201	
Adjustment functions	*Video delay: Switch selection: 2 frame, 1 frame, or 4H Fine adjustment: in increments of 70 ns (1 ck) - Max. 16 steps *Audio transmission ON/OFF *Video input selection - Serial or Parallel *Video output selection - 8 bit or 10 bit *Pre-process comb filter ON/OFF *Horizontal blanking period (NORMAL/NARROW)

DIGITAL RATE CONVERTER



**Rear Panel
(DFX-1201)**

Specifications

Inputs/outputs

Digital video/audio signal input	PARALLEL (D-sub 25-pin) (1) ECL, 110 Ω , balanced, SMPTE125M format (10 bits) SERIAL (BNC type) (1) 0.8 Vp-p \pm 10%, 75 Ω , unbalanced, SMPTE259M format
Digital video/audio signal output	PARALLEL (D-sub 25-pin) ECL, 110 Ω , balanced, SMPTE244M format (10 bits) SERIAL (BNC type) (2) 0.8 Vp-p \pm 10%, 75 Ω , unbalanced, SMPTE259M format
Reference video signal input	BNC type (2), SMPTE170M format Composite video: 1 V \pm 0.3 Vp-p, 75 Ω Black burst: 0.3 Vp-p, 75 Ω
CF signal output	BNC type (1), TTL level First frame: Low Second frame: High
Advance CF signal input	BNC (1), TTL level First frame: Low Second frame: High
Luminance	6 MHz (-3 dB)
Chrominance	(NTSC format) WIDE: I and Q axis, 1.5 MHz (-3 dB) STANDARD: I axis 1.5 MHz (-3 dB), Q axis, 0.5 MHz (-2 dB), (PAL format) 1.3 MHz (max. -3 dB)

Others

Encoder pre-process	ON/OFF selectable
Set-up	Selectable in eight steps (1.25 % steps)
Dark clip	ON/OFF selectable

H-blanking	STD: 10.9 μ s Narrow: 10.3 μ s ON/OFF selectable
V-blanking	First and third field: 10 to 20 Second and fourth field: 9 to 20 ON/OFF selectable
Audio signal	2 frames/1 frame/4 lines selectable
Signal delay	Selectable in 16 steps
System Delay	(1 clock=70 ns)

General

Power requirements	100 to 120 V \pm 10%, 50/60 Hz 220 to 240 V \pm 10%, 50/60 Hz
Power consumption	80 W (DFX-1201) 100 W (DFX-1200P)
Operating temperature	5 $^{\circ}$ C to 40 $^{\circ}$ C (41 $^{\circ}$ F to 104 $^{\circ}$ F)
Operating humidity	20 to 80 % (Non-condensing)
Storage temperature	-20 $^{\circ}$ C to +60 $^{\circ}$ C (-4 $^{\circ}$ F to +140 $^{\circ}$ F)
Mass	Approx. 12 kg (26 lb 7 oz) (DFX-1201) Approx. 14 kg (30 lb 14 oz) (DFX-1200P)
Dimensions	DFX-1201: 424 x 88 x 490 mm (w/h/d) (16 $\frac{3}{4}$ x 3 $\frac{1}{2}$ x 19 $\frac{3}{8}$ inches) DFX-1200P: 424 x 88 x 460 mm (w/h/d) (16 $\frac{3}{4}$ x 3 $\frac{1}{2}$ x 18 $\frac{1}{8}$ inches)

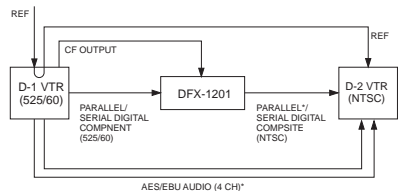
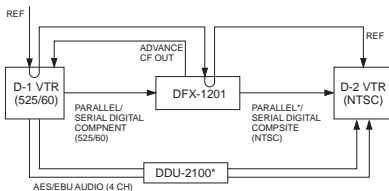
Supplied accessories

AC power cord	(1)
Rack mounting bracket	(1 set)
Operation and maintenance manual	(1)

Ordering Information

- * DFX-1201/1200P Digital Rate Converter
- * Extension Board

System Connection Examples (DFX-1201)



Note : Audio signals can be embedded in a digital video, thus the AES/EBU audio signal path is not required except when digital audio signals are transferred in parallel to a video line and when a parallel digital video connection is used between the DFX-1201 and D-2 VTR.

Features and specifications are subject to change without notice.



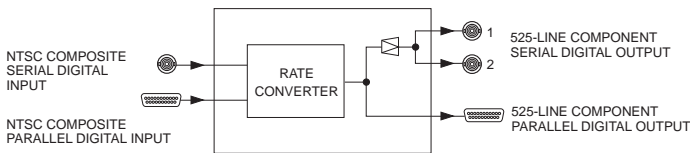
Features

- ◆ Accepts an NTSC serial or parallel composite digital signal, and outputs it both as a serial and a parallel component digital signal
- ◆ Adaptive 3-dimensional Y/C separation of composite signal

Overview

The DFX-2101 digital rate converter accepts either an NTSC serial or parallel composite digital video signal. The input signal is converted into a 525-line component digital video signal and output in serial and parallel formats. The DFX-2101 mounts in a standard 19-inch rack and is 2U high.

Block Diagram



DFX-2101	
Adjustment functions	*Video delay: Switch selection: 2 frame, 1 frame, + 2H Fine adjustment: in increments of 75 ns (1 ck) - Max. 16 steps *Audio transmission ON/OFF *Video input selection - Serial or Parallel *Video output selection - 8 bit or 10 bit

I/F Processors Others

DIGITAL RATE CONVERTER



Rear Panel

Specifications

Inputs/outputs

Digital video/audio signal input	PARALLEL (D-sub 25-pin) (1) ECL, 110 Ω , balanced, SMPTE244M format (10 bits) SERIAL (BNC type) (1) 0.8 Vp-p \pm 10%, 75 Ω , unbalanced, SMPTE259M format
Digital video/audio signal output	PARALLEL (D-sub 25-pin) ECL, 110 Ω , balanced SMPTE125M format (10 bits) SERIAL (BNC type) (2) 0.8 Vp-p \pm 10%, 75 Ω , unbalanced, SMPTE259M format
Reference video signal input	BNC type (2), SMPTE170M format Composite video: 1 V \pm 0.3 Vp-p, 75 Ω Black burst: 0.3 Vp-p, 75 Ω
CF signal output	BNC type (2), TTL level First frame: Low Second frame: High
Luminance	6 MHz (-3 dB)
Chrominance	R-Y/B-Y: 1.5 MHz (-3 dB)

Others

Set-up	Selectable in eight steps (1.25 % steps)
V-blanking	First and third field: 10 to 20 Second and fourth field: 272 (9) to 283 (20)
Audio signal	ON/OFF selectable
Signal delay	2 frames/1 frame + 2 lines selectable
System Delay	Selectable in 16 steps (1 clock=74 ns)

General

Power requirements	100 to 120 V \pm 10%, 50/60 Hz 220 to 240 V \pm 10%, 50/60 Hz
Power consumption	90 W
Operating temperature	5 $^{\circ}$ C to 40 $^{\circ}$ C (41 $^{\circ}$ F to 104 $^{\circ}$ F)
Operating humidity	20 to 80 % (Non-condensing)
Storage temperature	-20 $^{\circ}$ C to +60 $^{\circ}$ C (-4 $^{\circ}$ F to +140 $^{\circ}$ F)
Mass	Approx. 14 kg (30 lb 14 oz)
Dimensions	424 x 88 x 490 mm (16 $\frac{3}{4}$ x 3 $\frac{1}{2}$ x 19 $\frac{3}{8}$ inches) (w/h/d)

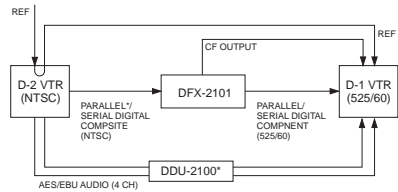
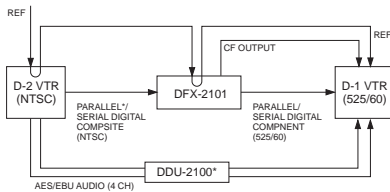
Supplied accessories

AC power cord (1)
Rack mounting bracket (1 set)
Operation and maintenance manual (1)

Ordering Information

- * DFX-2101 Digital Rate Converter
- * Extension Board

System Connection Examples



Note : Audio signals can be embedded in a digital video, thus the AES/EBU audio signal path is not required except when digital audio signals are transferred in parallel to a video line and when a parallel digital video connection is used between the D-2 VTR and DFX-1201.



Features

- ◆ Designed for use with two Sony DVR-2000/2100 D-1 VTRs to record and playback wide-bandwidth combinations of video signals
- ◆ Four operating modes to handle alternative combinations of video signals
- ◆ BKDV-4224AD – A to D converter to record component analog signals
- ◆ BKDV-4224DA – D to A converter to output component analog playback signals
- ◆ Built-in video test signal generator
- ◆ Adjustment of component signal gains

Overview

The BKDV-4224AD signal converter converts RGB/key or Y/B-Y/R-Y/key component analog video signals into two component serial digital signals. The BKDV-4224DA signal converter converts two component serial digital signals to RGB/key or Y/B-Y/R-Y/key component analog signals.

Each unit is designed to operate with two DVR-2000/2100 VTRs to record/playback a combination of video signals which has a wide bandwidth.

These combinations are:

- 4:2:2:4 mode: 4:2:2 Y/B-Y/R-Y video signals, plus a key signal
- 4:4:4:4 (4 x 4) mode: RGB or Y/R-Y/B-Y full bandwidth video signals, plus a key signal
- 8:4:4 H mode: recording at double the horizontal resolution of a 525 or 625-line signal
- 8:4:4 V mode: progressive scan recording of a 525 or 625-line signal

These units can also be used in 4:2:2 mode as stand-alone A/D and D/A signal converters.

The BKDV-4224AD and BKDV-4224DA mount into a standard 19-inch rack and are 1U high.

D-1 SIGNAL CONVERTER



BKDV-4224AD

Rear Panel



BKDV-4224DA

Rear Panel

Specifications

Inputs/outputs (4224AD)	
Digital video input	SERIAL INPUT 1, 2 (BNC type) 0.8 Vp-p, 75 Ω terminated Bit rate: 270 Mbps
Cable length	200 m max. (when using a Belden 8281, Fujikura 5C2V or RG-6A/U coaxial cable)
Analog video output	ANALOG OUTPUT (BNC type) Y/B-Y/R-Y or G/B/R (selectable) GBR: 0.7 Vp-p SYNC: 0.3 Vp-p Y: 1.0 Vp-p KEY: 1.0 Vp-p B-Y/R-Y: 0.7 Vp-p
Digital video output	SERIAL OUTPUT VIDEO, KEY (BNC type) 0.8 Vp-p, 75 Ω terminated Bit rate: 270 Mbps
Cable length	200 m max. (when using a Belden 8281, Fujikura 5C2V or RG-6A/U coaxial cable)
Video index	VIDEO INDEX I/O D-Sub 25-pin
Analog video frequency response	
[4:2:2:4]	Y/KEY: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB) B-Y/R-Y: DC to 2.75 MHz ±0.5 dB (at 3 MHz, -3 dB)
[4 x 4]	Y/KEY: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB) B-Y/R-Y: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB)
[8:4:4]	Y: DC to 11.5 MHz ±0.5 dB (at 12 MHz, -3 dB) B-Y/R-Y: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB)
[4:2:2]	Y: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB) B-Y/R-Y: DC to 2.75 MHz ±0.5 dB (at 3 MHz, -3 dB)
Inputs/outputs (4224DA)	
Analog video input	ANALOG INPUT (BNC type) Y/B-Y/R-Y or R/G/B/ (selectable) GBR: 0.7 Vp-p SYNC: 0.28 to 4.0 Vp-p Y: 1.0 Vp-p B-Y/R-Y: 0.7 Vp-p with loop-through outputs
Digital video input	SERIAL INPUT (BNC type) VIDEO/KEY 0.8 Vp-p, 75 Ω terminated Bit rate: 270 Mbps

Digital video output	SERIAL OUTPUT 1, 2 (BNC type) 0.8 Vp-p, 75 Ω terminated Bit rate: 270 Mbps
Cable length	200 m max. (when using a Belden 8281, Fujikura 5C2V or RG-6A/U coaxial cable)
Video index	VIDEO INDEX I/O D-Sub 25-pin

Sampling frequency	
[4:2:2:4]	Y/KEY: 13.5 MHz, B-Y/R-Y: 6.75 MHz
[4 x 4]	Y/KEY/B-Y/R-Y: 13.5 MHz
[8:4:4]	Y: 27 MHz, B-Y/R-Y: 13.5 MHz
[4:2:2]	Y: 13.5 MHz, B-Y/R-Y: 6.75 MHz

Analog video frequency response	
[4:2:2:4]	Y/KEY: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB) B-Y/R-Y: DC to 2.75 MHz ±0.5 dB (at 3 MHz, -3 dB)
[4 x 4]	Y/KEY: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB) B-Y/R-Y: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB)
[8:4:4]	Y: DC to 11.5 MHz ±0.5 dB (at 12 MHz, -3 dB) B-Y/R-Y: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB)
[4:2:2]	Y: DC to 5.75 MHz ±0.5 dB (at 6 MHz, -3 dB) B-Y/R-Y: DC to 2.75 MHz ±0.5 dB (at 3 MHz, -3 dB)

General	
Power requirements	90 to 132 V AC, 50/60 Hz 200 to 264 V AC, 50/60 Hz
Power consumption	65 W (BKDV-4224AD) 55 W (BKDV-4224DA)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Operating humidity	20% to 80%
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Mass	7 kg (15 lb 7 oz)
Dimensions	424 x 44 x 550 mm (w/h/d) (16 3/4 x 1 3/4 x 21 3/4 inches)

Supplied accessories	
AC power cord (1)	
D-sub 25-pin connector (1)	
Plug holder (1)	
Rack mount bracket (1)	
Conversion plug (1)	
Operation and maintenance manual (1)	

Ordering Information

- * BKDV-4224AD/4224DA D-1 Signal Converters
- * DVR-2000/2100 D-1 VTRs



Features

- ◆ Efficient data processing doubles the recording capacity of a DVR-2000/2100 D-1 VTR
- ◆ Allows key signal to be recorded along with the main video signal
- ◆ Four operating modes to record alternative combinations of video signals
- ◆ Component serial digital video and component analog video I/O
- ◆ 10-bit A to D and D to A conversion
- ◆ 525/625-line operation
- ◆ Remote control from VTR

Overview

The DVPC-4224 operates in any of the four following modes, processing the signals so that they can be recorded and played back on a DVR-2000/2100 D-1 format VTR.

4:2:2 mode: 4:2:2 Y/B-Y/R-Y video signals, plus a key signal
 4:4:4 mode: 4:4:4 (4 x 4) mode: RGB or Y/R-Y/B-Y full bandwidth video signals, plus a key signal

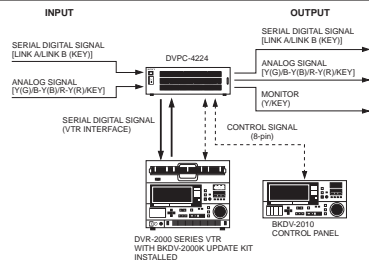
Dual 4:2:2 mode: two 4:2:2 Y/R-Y/B-Y video signals

D-1 (by-pass) mode: 4:2:2 D-1 signal

A DVR-2100/2000 requires the installation of an BKDV-2000K update kit to operate with a DVPC-4224.

The DVPC-4224 mounts into a standard 19-inch rack and is 3U high.

System Configuration



DIGITAL SIGNAL PROCESSOR



Rear Panel

Specifications

Inputs/outputs

Digital video input	BNC type, 525/625 component serial digital signal conforming to SMPTE259M LINK A/LINK B (Key): 0.8 Vp-p, 75 Ω
Analog video input	BNC type, Y(G)/B-Y(B)/R-Y(R)/KEY/SYNC Y/KEY: 1.0 Vp-p, 75 Ω G: 1.0 Vp-p (with Sync) or 0.7 Vp-p (without Sync) B-Y(B)/R-Y(R): 0.7 Vp-p, 75 Ω SYNC: 0.3 Vp-p, 75 Ω
Reference	BNC type (with loop-through) 0.28 to 4 V (Black burst or composite sync)
Digital video output	BNC type, Serial digital video signal of the same format as that to the input connector LINK A/LINK B (Key): 0.8 Vp-p, 75 Ω
Analog video output	BNC type, Y(G)/B-Y(B)/R-Y(R)/KEY/SYNC Y(G)/KEY: 1.0 Vp-p, 75 Ω B-Y(B)/R-Y(R): 0.7 Vp-p, 75 Ω SYNC: 0.3 Vp-p, 75 Ω

Video characteristics

Sampling frequency	4:2:2:4/Dual 4:2:2/D-1 mode Y/KEY: 13.5 MHz B-Y/R-Y: 6.75 MHz 4:4:4 mode Y(G)/B-Y(B)/R-Y(R)/KEY: 13.5 MHz
Quantization	10 bits/sample
Bandwidth	4:2:2:4/Dual 4:2:2/D-1 mode (Digital to Analog) Y/KEY: 0 to 5.75 MHz ± 0.5 dB (at 6 MHz, -3 dB) B-Y/R-Y: 0 to 2.75 MHz ± 0.5 dB (at 3 MHz, -3 dB) 4:4:4 mode (Digital to Analog) Y(G)/B-Y(B)/R-Y(R)/KEY: 0 to 5.75 MHz ± 0.5 dB (at 6 MHz, -3 dB) 4:2:2:4 D-1 mode (Analog to Analog) Y/KEY: 0 to 5.75 MHz ± 0.7 dB (at 6 MHz, -3 dB) B-Y/R-Y: 0 to 2.75 MHz ± 0.7 dB (at 3 MHz, -3 dB) 4:4:4 mode (Analog to Analog) 0 to 5.75 MHz ± 0.7 dB (at 6 MHz, -3 dB)

S/N	More than 62 dB (Digital to Analog) More than 60 dB (Analog to Analog)
Non-linearity	2 % or less
Shuffling size	1 field
K factor	1 % or less
Channel delay	Below ± 15 ns

General

Power requirements	AC 90 to 132 V, 50/60 Hz AC 198 to 264 V, 50/60 Hz
Power consumption	230 W
Operating temperature	5 $^{\circ}$ C to 40 $^{\circ}$ C (41 $^{\circ}$ F to 104 $^{\circ}$ F)
Storage temperature	-20 $^{\circ}$ C to +60 $^{\circ}$ C (-4 $^{\circ}$ F to +140 $^{\circ}$ F)
Operating humidity	20% to 80%
Mass	16 kg (35 lb 4 oz)
Dimensions	424 x 132 x 450 mm (16 ³ / ₄ x 5 ¹ / ₄ x 17 ³ / ₄ inches) (w/h/d)

Supplied accessories

AC power cord (1)
8-pin remote control cable (2 m) (1)
Rack mount angle (3U) (1)
Operation and maintenance manual (1)

Ordering Information

- * DVPC-4224 Digital Signal Processor
- * BKDV-2000K Update Kit



Features

- ◆ Enables a Sony DVR-20/20P or DVR-28/28P D-2 VTR to record and play back component digital video signals
- ◆ Optional component analog I/O boards
- ◆ 525/625-line operation

Overview

The DFX-C2 (NTSC)/C2P (PAL) component adapter is a digital video processor that enables a DVR-20/20P or DVR-28/28P D-2 format VTR to record and playback a component digital signal. Installing an optional BKDF-525A (NTSC) or BKDF-625 (PAL) board provides component and composite analog output capability. The addition of an optional BKDF-21 digital rate converter kit provides a component analog output when replaying a standard D-2 format tape.

A DVR-20/20P or DVR-28/28P D-2 format VTR requires the installation of an optional BKDV-C2/C2P Update Kit to operate with a DFX-C2/C2P.

The DFX-C2/C2P mounts into a standard 19-inch rack and is 3U high.

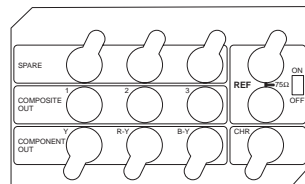
Notes:

The BKPf-525A is the modified BKDF-525. The applied modifications are as follows.

- The analog input circuit has been removed
- A character superimposition function for analog output signals has been modified

After installing the board, attach the supplied rear panel sheet onto the input/output connector section of the DFX-C2.

- SPARE: N.C. (Non Connected)
- COMPOSITE OUT: Output three composite-signal lines without character superimposition support.
- COMPONENT OUT: Outputs a single component-signal line with or without character superimposition.
- CHR: Outputs a composite signal with the character superimposition support.



Rear Panel Sheet

I/F Processors Others

COMPONENT ADAPTER



Rear Panel

Specifications

Inputs/outputs	
Video input	REF IN (BNC type) (2) (loop through) 1.0 Vp-p ± 0.3 V, 75 Ω
Analog component (with installation of BKDF-525A/625)	BNC type (3) Y: 1.0 Vp-p, 75 Ω B-Y: 0.7 Vp-p, 75 Ω R-Y: 0.7 Vp-p, 75 Ω
Digital video input	SDI IN (BNC type) (3) (active through), 0.8 Vp-p 75 Ω , SMPTE259M/CCIR 656-III
D2 VTR interface	Parallel interface D-sub, 25-pin, ECL balanced, SMPTE 244M standard
Digital audio input	CH 1/2, 3/4, XLR type, 3-pin (female) (2) AES/EBU format
Character	Video output BNC type (1) Y: 1.0 Vp-p, 75 Ω Composite (with BKDF-525A/625 installed): 1.0 Vp-p, 75 Ω
Analog component (with installation of BKDF-525A/625)	BNC type (3) Y: 1.0 Vp-p, 75 Ω B-Y: 0.7 Vp-p, 75 Ω R-Y: 0.7 Vp-p, 75 Ω
Monitor out (with installation of BKDF-525A/625)	BNC type (3) Y: 1.0 Vp-p, 75 Ω B-Y: 0.7 Vp-p, 75 Ω R-Y: 0.7 Vp-p, 75 Ω
Digital video output	SDI OUT (BNC type) (3) (1/2/3), 0.8 Vp-p, 75 Ω SMPTE259M/CCIR 656-III
D-2 VTR interface	Parallel interface D-sub, 25-pin, ECL balanced, SMPTE244M standard
Digital audio output	CH 1/2, 3/4, XLR type, 3-pin (male) (2) AES/EBU format
Remote connectors	
System control	Amphenol-type, 24-pin (complies with RS-422A)
Video control	D-sub, 15-pin (for connecting BVR-50)
Video characteristics	
Sampling frequency	Y: 13.5 MHz B-Y/R-Y: 6.75 MHz

Ordering Information

- * DFX-C2/C2P Component Adapter
- * BKDF-525A/625 Analog Interface Board
- * BKDF-21 Digital Rate Converter Kit

Recording samples/line	Y:720 B-Y/R-Y: 360
Recording lines	With BKDF-525A installed: 59.94 (10-263, 273-525) With BKDF-625 installed: 50 (7-310, 320-623)
Shuffling size	1 field
S/N ratio	Y, R-Y, B-Y: greater than 60 dB
Video bandwidth	Y: 0 to 5.75 MHz ± 0.5 dB R-Y/B-Y: 0 to 2.75 MHz ± 0.5 dB
Video level	Y: 1.0 Vp-p $\pm 2\%$ R-Y/B-Y: 0.7 Vp-p $\pm 2\%$
K factor	Y, R-Y/B-Y: less than 1 %
Phase difference between channels	Y, R-Y/B-Y: less than 10 ns
Adjustable output range	Video level: -3 dB to +3 dB Chroma level: -3 dB to +3 dB Chroma phase: ± 30 C Set-up level (NTSC)/black level (PAL): 210 m V Sync phase: $\pm 1/2$ H, 148 ns/step (coarse adjustment) SC phase: ± 1 subcarrier, 0.6 ns/step (fine adjustment)

General

Power requirements	DFX-C2: 100 to 120 V AC, 50/60Hz DFX-C2P: 100 to 120 V AC, 50/60 Hz (model for the U.S.A. and Canada) 220 to 240 V AC, 50/60 Hz (model for European countries and the U.K.)
Power consumption	DFX-C2: 150 W, 3 A (model for the U.S.A. and Canada) (with BKDF-525A and BKDF-21 installed) DFX-C2P: 155 W, 1.6 A (model for European countries and the U.K.) (with BKDF-625 and BKDF-21 installed)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Operating humidity	10% to 90%
Storage Temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Mass	Approx. 13 kg (28 lb 11 oz)
Dimensions	424 x 132 x 450 mm (16 3/4 x 5 1/4 x 17 3/4 inches) (w/h/d)

Supplied accessories

- AC power cord (1)
- Rack mount kit (1)
- Operation and maintenance manual (1)

- * BVR-50 Remote Control Unit
- * BKDV-C2/C2P Update Kit

Features and specifications are subject to change without notice.