Diversified Units for Various Applications

Plug-In Units for LT 443D

MULTIFORMAT VIDEO GENERATOR MAINFRAME

LT 443D-DA DIGITAL AUDIO UNIT

Installing the LT 443D-DA Digital Audio Unit in the LT 443D mainframe can output AES/EBU digital audio signals (four systems), silence signals (one system), and 48 kHz word clock signals.
The AES/EBU signal characteristics (e.g., output level, frequency) can be independently set for each output system.
The sampling frequency is synchronized with the video signal of plug-in unit installed in the mainframe.

☐ SPECIFICATIONS (LT 443D-DA)

Output
- AES/EBU Digital Audio Output
  - Number of Outputs: 4 (2-channel output)
  - Output Amplitude: 1 Vp-p ±0.1 V (into 75 Ω)
  - Output Connector: BNC
- Silence Signal (DARS grade 2) Output
  - Number of Outputs: 1 (2-channel output)
  - Output Amplitude: 1 Vp-p ±0.1 V (into 75 Ω)
  - Output Connector: BNC
- 48 kHz Word Clock
  - Number of Outputs: 1
  - Output Amplitude: 1 Vp-p ±0.1 V (into 75 Ω), 5 V CMOS, selectable
  - Output Connector: BNC

Signal Specifications
- Specifications: ANSI S4.40 (AES3-1992), AES 11-1997
  SMPTE 276M, AES-3id-2001

Function
- Sampling Frequency: 48 kHz (sync to video signal)
- Resolution: 20 bits, 24 bits, selectable
- Preemphasis: OFF, 50/15 µs, CCITT, selectable (CS bit can only be selected.)
- Frequency: 50, 100, 150, 200, 250, 300, 400, 500, 600, 750, 800, 1.0 k, 1.2 k, 1.5 k, 1.6 k, 2.0 k, 2.4 k, 3.0 k, 3.2 k, 4.0 k, 4.8 k, 5.0 k, 6.0 k, 8.0 k, 9.6 k, 10 k, 12 k, 15 k, 16 k, 20 kHz, silence
- Level: -60 to 0 dBFS (settable in 1 dB steps)
- Audio Click: 1, 2, 3, 4 sec, none
- Output ON/OFF: Selectable
- Timing
  Variable Range: ±1 AES/EBU frame
  Settable in 512 fs (24.576 MHz) steps
  *The timing can be varied with respect to the Video Unit installed in the LT 443D mainframe.
  The setting s are common to the digital audio, silence and word clock signals.
  *Frequency, level, and audio click can be set for each channel. Other items (except timing) can be respectively set to the 2-channel output.

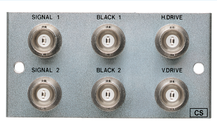
LT 443D-AA ANALOG AUDIO UNIT

Installing the LT 443D-AA Analog Audio Unit in the LT 443D mainframe can output analog audio signal (two systems).
Output characteristics (e.g., output level, frequency) can be independently set for each output system.
The sound sampling frequency is synchronized with the video signal of plug-in unit installed in the mainframe.

☐ SPECIFICATIONS (LT 443D-AA)

Output
- Number of Outputs: 2
- Output Impedance: 600 Ω, balanced
- Output Amplitude: 0.775 Vrms (into 600 Ω at 0 dBm)
- Output Amplitude Accuracy: ±0.5 dB (at 1 kHz)
- Output Amplitude Flatness: ±0.5 dB (1 kHz ref.)
- Output Connector: XLR-3P x 2

Function
- Sampling Frequency: 48 kHz (Sync to video signal)
- Frequency: 50, 100, 150, 200, 250, 300, 400, 500, 600, 750, 800, 1.0 k, 1.2 k, 1.5 k, 1.6 k, 2.0 k, 2.4 k, 3.0 k, 3.2 k, 4.0 k, 4.8 k, 5.0 k, 6.0 k, 8.0 k, 9.6 k, 10 k, 12 k, 15 k, 16 k, 20 kHz, silence
- Level: -40 to 4 dBm (settable in 1 dBm steps)



LT 443D-CS ANALOG COMPOSITE UNIT

The LT 443D-CS Analog Composite Unit adds the NTSC/PAL analog composite signal output capability to the LT 443D mainframe.
Various functions (e.g., ID character, simple motion pictures, embedded audio, NATURAL picture pattern *1) are provided.

*1: The NATURAL picture function is only usable when the Option LT 443D-70 is installed in the mainframe.

☐ SPECIFICATIONS (LT 443D-CS)

Test Signal Output
- Format: NTSC, NTSC+REFERENCE *2, NTSC+ID *3, NTSC+REFERENCE+ID *2 *3, NTSC+SETUP, NTSC+SETUP+REF *2, NTSC+SETUP+ID *3, NTSC+SETUP+REF+ID *2 *3, PAL *4, PAL+REFERENCE *4 *2
  *2 REFERENCE and REF denote Field Reference.
  *3 ID denotes 10 field ID.
  *4 The 25-Hz offset subcarrier is used for the PAL system.
- Pattern: COLOR BAR 100%, COLOR BAR 75%, EBU COLOR BAR, BBC COLOR BAR, SMPTE COLOR BAR, FLAT FIELD 100%, FLAT FIELD 50%, FLAT FIELD 0%, CROSSHATCH 1, CROSSHATCH 2, LINE SWEEP 100%, LINE SWEEP 60%, MULTIBURST 100%, MULTIBURST 60%, SHALLOW RAMP, 10 STEP RAMP, MOD RAMP, MONOSCOPE, RED RASTER, WINDOW, PULSE & BAR
- NATURAL Picture *5: Up to five screens of 24-bit full color BMP file can be switched.
- APL
  MODE: APL OFF, APL HIGH, APL LOW, APL(BOUNCE), BOUNCE
  APL (BOUNCE) is switched at a preset time interval for APL HIGH and APL LOW.
  BOUNCE is switched at a preset time interval for FLAT FIELD 100 % and FLAT FIELD 0 %.
  Time Interval: 1 to 20 seconds (settable in one second steps)
- ID Charactor
  Number of Characters: Up to 20
  Size: 32 x 32 dots, 64 x64 dots, selectable
  Display Position: Arbitrary position on the screen.
  Blinking: OFF, 1 to 10 seconds (settable in one second steps)
- Simple Motion Picture Function
  Direction: 8 directions (up, down, left, right, and combinations)
  Speed: H: 0 to 256 dots in 4 dot steps
  V: 0 to 256 lines in 2 line steps
  (Pattern can be scrolled in field time steps.)
  *5 The Option LT 443D-70 should be installed in the mainframe to enable this function.
- Timing Variable: The timing of OUTPUT 1 and 2 can be varied simultaneously.
  H-PHASE: Up to ±1 line-1 dot
  V-PHASE: Up to ±1 frame-1 line
  F-PHASE: NTSC:Up to ±5 frames
  PAL: UP to ±2 frames
- Number of Outputs: 2

Black Signal Output
- format: Depends on the test signal format. (Supports the field Reference and 10 field ID)
- Output Signal: Analog black burst
- Format: The timing of OUTPUT 1 and 2 can be varied simultaneously.
- Timing Variable
  H-PHASE: Up to ±1 line-1 dot
  V-PHASE: Up to ±1 frame-1 line
  F-PHASE: NTSC:Up to ±5 frames
  PAL: UP to ±2 frames
- Number of Outputs: 2 Systems (one each)
- Signal Level: 1 Vp-p (into 75 Ω)

Horizontal Drive Pluse Output
- Format: Depends on the test signal format.
- Signal Level: 2 Vp-p (into 75 Ω)
- Signal Polarity: Negative
- Timing Variable
  H-PHASE: Up to ±1 line-1 dot
- Number of Outputs: 1

Vertical Drive Pluse Output
- Format: Depends on the test signal format.
- Signal Level: 2 Vp-p (into 75 Ω)
- Signal Polarity: Negative
- Timing Variable
  V-PHASE: Up to ±1 frame-1 line
- Number of Outputs: 1

Color Still Picture Conversion Application — Option

The LT 443D-70 Color Still Picture Conversion Application is used to convert bitmap files to color still picture data that can be used on the LT 443D.

Operating Environment of the Application

Below are the system requirements for running the application.

System
A PC/AT compatible with a Pentium 100 MHz CPU or faster and at least 32 MB of memory.

OS
Windows 95, Windows 98, or Windows Me.

Hard Disk
Free disk space of 30 MB or more (if the swap file area and the storage area for color still picture data are added, a larger disk space is necessary).

Disk Drive
A drive that can read CD-ROMs.

Display
Display adapter equipped with SVGA resolution or better.

Pointing Device
Mouse or an alternative function.

•Windows is a registered trademark of Microsoft Corporation.
•Pentium is a registered trademark of Intel Corporation.

File Format

The image data that can be used on the application is limited to 24-bit color Windows bitmap files (.bmp extension).
Compressed bitmap files (.rle extension) cannot be used.
The table below shows the size and the number of colors of the bitmap file corresponding to each video format.

Resolution and the Number of Colors of the Bitmap File Corresponding to Each Video Format

	Video Format	LT 443D Screen Display Size (Horizontal x Vertical)	Bitmap Size (Horizontal x Vertical)	Number of Bitmap Colors
H D	1035 line system format	1920(dot) × 1035(Line)	1920(pixel) × 1035(pixel)	24(bit)
	1080 line system format	1920(dot) × 1080(Line)	1920(pixel) × 1080(pixel)	24(bit)
	720 line system format	1280(dot) × 720(Line)	1280(pixel) × 720(pixel)	24(bit)
S D	525 line system format	720(dot) × 487(Line)	720(pixel) × 487(pixel)	24(bit)
	625 line system format	720(dot) × 567(Line)	720(pixel) × 567(pixel)	24(bit)

*1 Bitmap files that are larger than the screen display size of the corresponding format cannot be converted.
*2 If bitmap files that are smaller than the screen display size of the corresponding format are converted, the image data after conversion is centered, and black data is inserted in the remaining section.

Plug-in Unit for LT 443D

The plug-in unit is installed at the factory; users cannot replace the unit. Up to four unit can be installed.

Table lists installable combination of the unit and UNIT compartment.

Model \ Compartment	UNIT 1	UNIT 2	UNIT 3	UNIT 4
LT 443D-GL	Yes *1	No	No	No
LT 443D-HD/HDB	Yes	Yes	Yes	Yes
LT 443D-SD/SDB	Yes	Yes	Yes	Yes
LT 443D-BL	Yes	Yes	Yes	Yes
LT 443D-DA	Yes	Yes	Yes	Yes
LT 443D-AA	Yes	Yes	Yes	Yes
LT 443D-CS	Yes	Yes	Yes	Yes

*1: The LT 443D-GL can only be installed in the UNIT 1 compartment.

LT 444 CHANGEOVER

- The LT 444 is a changeover unit that switches to the backup system when accidents occur.
- The LT 444 can be configured in the system with the LT 443D.

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AGENT

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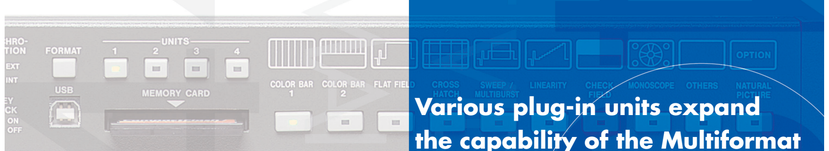
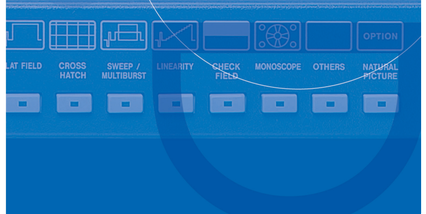
MULTIFORMAT VIDEO GENERATOR LT 443D



Various plug-in units expand the capability of the Multiformat Signal Generator.

Plug-In Units for LT 443D



LT 443D

MULTIFORMAT VIDEO GENERATOR MAINFRAME

Compact flash memory card is not supplied as standard accessory.

Plug-in units expand the capability of the Multiformat Signal Generator Multiformat Video Generator Mainframe

The LT 443D Multiformat Video Generator Main frame can be used where multiformat digital broadcast systems are the norm. Plug-in modules enable the output of SDI signals(i.e., HDTV, SDTV) embedded audio, sync signals and genlock functions. Users can customize this signal generator as desired.

FEATURES

- **Plug-in units provide various functions**
  Since up to four plug-in units can be installed in the mainframe (consisting of a power supply, main signal generator, and controller), users can customize this signal generator as desired.
  *1 The plug-in unit is installed at the factory.
- **Applicable to multiformat HDTV**
  For the SDI signals, HDTV 14 format unit and 525 line/625 line SDTV unit are provided. The NTSC/PAL analog video signal unit is also available.
  Since each unit can output the signal simultaneously, a multiformat system can be constructed to satisfy user's requirements.
- **Various sync output**
  Two units can simultaneously output HD signals with 74.25 MHz clock and 74.25/1.001 MHz clock.
- **Easy-to-use sync signals**
  For today's modern age of digital TV systems, BB signal (for NTSC/PAL) and HDTV tri-level sync signals can be generated from the Analog BB Unit.
- **Ethernet provided**
  Since the ethernet capability is provided as standard. This feature can remotely control various functions and monitor the genlock status.
- **User-friendly operability**
  Leader's traditional design and operability concepts are also reflected in this instrument. User-friendly operation includes significantly reduced power-on initialization time is advantageous to a high-performance instrument.

LT 443D SPECIFICATIONS

Compartment
Number of compartments: 4
ID Function: Automatically identifies the unit installed.
*2 Refer to specifications of each unit.

LCD Panel
Number of Characters: 20 characters x 2 lines can be displayed (W/backlight)

Internal Clock
Internal Reference Frequency: 27 MHz

Memory Card Slot
Applicable Card: Compact flash memory card (CFA TYPE-1) *3
Function: Storing/reading preset data
Reading logo mark data (This function will be supported.)
Reading NATURAL PICTURE data *4
*3 No compact flash memory card is supplied as standard accessory.
Memory cards produced by following manufacturers should be procured (as of August 2002):SanDisk, Lexar Media, Toshiba
*4 The NATURAL picture function is only usable when the LT 443D-70 Option is installed in the mainframe.

External Interface
Ethernet: 10Base-T/100 Base-T (Automatic selection)
USB (Universal Serial Bus): Applicable to USB 1.1(This function will be supported)

General Specifications
Environmental Conditions
Operating Temperature Range: 0 to 40 ˚C
Operating Humidity Range: ≤ 90% RH (without condensation)
Spec-Guaranteed Temperature Range: 10 to 35 ˚C
Spec-Guaranteed Humidity Range: ≤ 85% RH (without condensation)
Operating Environment: Indoor use
Operating Altitude: Up to 2000 m
Overvoltage Category: II
Pollution Degree: 2

Power Requirements: 90 to 250 VAC, 50/60 Hz
Power Consumption: Approx. 150 W max. (Approx. 75 W max. *5)

Dimensions and Weight 426 (W) x 44 (H) x 560 (D) mm, Approx. 7 kg *5
*5 When four plug-in units (i.e., LT 443D-HD, LT 443D-SD, LT 443D-BL, LT 443D-GL) are installed.

Accessories:
Power cord ---------- 1
Rack Support ---------- 2
Screw (for rack support) ---------- 4
Rubber Feet ---------- 5
Instruction Manual ---------- 1

Diversified Units for Various Applications

Plug-In Units for LT 443D
MULTIFORMAT VIDEO GENERATOR MAINFRAME

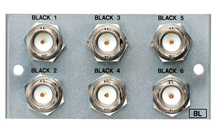
LT 443D-GL GENLOCK UNIT

This unit provides genlock capability to lock the LT 443D mainframe with the external reference signal, and three independent black signal generators.
The NTSC/PAL black burst signals, principal 20 types of HDTV analog tri-level sync signal formats, and 525p/625p analog sync signals can be used as an external reference signal.
The following black burst signal formats can be selected. For NTSC/PAL system, black burst signal with field reference pulse is provided. For NTSC system, 10-field black burst signal with ID conforming to the SMPTE 318M standards is provided.
The genlock timing can be adjusted for the entire color frame range when the NTSC/PAL black burst signal is applied; entire frame range when the HDTV analog tri-level sync signal is applied.
Three black burst signal output systems with selectable formats are available as follows.
For NTSC/PAL system, standard black burst signal and black burst signal with field reference pulse are provided. For NTSC system, 10-field black burst signal with ID conforming to the SMPTE 318M standards, 525p/625p analog sync signal, and HDTV analog tri-level sync signal are provided.
The format and output signal timing of each output can be respectively set.
The black signal timing can be adjusted for the entire color frame range when the NTSC/PAL black burst signal is applied; entire frame range when the HDTV analog tri-level sync signal is applied.

SPECIFICATIONS (LT 443D-GL)

Genlock Function
Loop-Through Input
Input Configuration: BNC connector, 75 Ω loop-through
Return Loss: ≥ 30 dB (0.3 MHz to 30 MHz)
Reference Input Signal: HDTV tri-level sync signal conforming to SMPTE 240M/274M/296M standards
525p/625p analog sync signal conforming to SMPTE 293M/ITU-R BT 1358 standards
NTSC black burst signal conforming to EBU N14/SMPTE RP-154/SMPTE 170M/SMPTE 318M standards
PAL black burst signal conforming to ITU-R BT. 470-6 standards
Reference Input Signal Level
• HDTV: Positive polarity: 300 mV
Negative polarity:-300 mV
• 525p/625p: -300 mV
• NTSC: -286 mV
• PAL: -300 mV
Operation Modes: AUTO and MANUAL modes are provided for selecting INT or EXT mode.
Genlock Timing Variable Range
• H-PHASE (FINE): Fine adjustment between the H-PHASE (COARSE) steps.
• H-PHASE (DRSE): ±1/2 line with respect to the input signal
• V-PHASE: ±1 field with respect to the input signal (±1/2 frame with respect to the input signal in progressive mode)
• F-PHASE: Up to ±5 frames with respect to the input signal. (Variable range depends on the input signal format.)

Analog Sync Signal Output
BLACK 1/BLACK 2/BLACK 3 Output
Format: HDTV tri-level sync signal conforming to SMPTE 240M/274M/296M standards
525p/625p analog sync signal conforming to SMPTE 293M/ITU-R BT 1358 standards
NTSC black burst signal conforming to EBU N14/SMPTE RP-154/SMPTE 170M/SMPTE 318M standards
PAL black burst signal conforming to ITU-R BT. 470-6 standards
Sync Level (into 75 Ω)
• HDTV: Positive polarity: 300 mV ±6 mV
Negative polarity: -300 mV ±6 mV
• 525p: -300 mV ±6 mV
• 625p: -300 mV ±6 mV
• NTSC: 40 IRE ±1 IRE
• PAL: -300 mV ±6 mV
Rise and fall times
• HDTV: 54 ns ±20 ns
• 525p: 70 ns ±10 ns
• 625p: 100 ns ±10 ns
• NTSC: 140 ns ±10 ns
• PAL: 200 ns ±10 ns
Horizontal Sync Width
• 1125-Line Format: Positive polarity: 593 ns ±40 ns
Negative polarity: 593 ns ±40 ns
• 750-Line Format: Positive polarity: 539 ns ±40 ns
Negative polarity: 539 ns ±40 ns
• 525p: 2.35 µs ±0.05 µs
• 625p: 2.35 µs ±0.1 µs
• NTSC/PAL: 4.7 µs ±0.1 µs
Vertical Sync Width: 5H (HDTV) / 6H (525p) / 5H (625p) / 3H (NTSC) / 2.5H (PAL)
Output Connector: BNC
Number of Outputs: 1 each
Timing Variable Range
• H-PHASE: Up to ±1 line-1 dot
• V-PHASE: Up to ±1 frame-1 line
• F-PHASE: Up to ±5 frames (depends on the input signal format.)

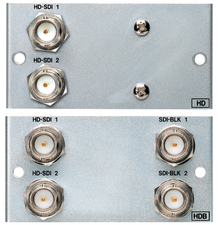


LT 443D-BL ANALOG BLACK UNIT

The LT 443D-BL Analog Black Signal Unit adds the 20 format HDTV analog tri-level sync signal, 525p/625p analog sync signals, and NTSC/PAL black burst signals output capability to the LT 443D mainframe.
Three independent output systems (six outputs, two outputs per system) are provided to output multiformat black sync signal.
The signal timing can be set for each output.
The ten-field black signal with ID conforming to the SMPTE 318M standards is also available.
The entire range of timing can be set for the 525p/625p analog sync signals and NTSC/PAL black burst signals in 54 MHz clock steps. The entire range of timing can also be set for the HDTV analog tri-level sync signal in 74.25 MHz or 74.25/1.001 MHz clock steps.

SPECIFICATIONS (LT 443D-BL)

Analog Sync Signal Output
BLACK 1, 2/BLACK 3, 4/BLACK 5, 6:
Format: HDTV tri-level sync signal conforming to SMPTE 240M/274M/296M standards
525p/625p analog sync signal conforming to SMPTE 293M/ITU-R BT 1358 standards
NTSC black burst signal conforming to SMPTE RP-154/SMPTE 170M/SMPTE 318M standards
PAL black burst signal conforming to ITU-R BT. 470-6 standards
Sync Level (into 75 Ω)
• HDTV: Positive polarity: 300 mV ±6 mV
Negative polarity: -300 mV ±6 mV
• 525p: -300 mV ±6 mV
• 625p: -300 mV ±6 mV
• NTSC: 40 IRE ±1 IRE
• PAL: -300 mV ±6 mV
Rise and fall times
• HDTV: 54 ns ±20 ns
• 525p: 70 ns ±10 ns
• 625p: 100 ns ±10 ns
• NTSC: 140 ns ±10 ns
• PAL: 200 ns ±10 ns
Horizontal Sync Width
• 1125-Line: Positive polarity: 593 ns ±40 ns
Negative polarity: 593 ns ±40 ns
• 750-Line: Positive polarity: 539 ns ±40 ns
Negative polarity: 539 ns ±40 ns
• 525p: 2.35 µs ±0.05 µs
• 625p: 2.35 µs ±0.05 µs
• NTSC/PAL: 4.7 µs ±0.1 µs
Vertical Sync Width: 5H (HDTV) / 6 H (525p) / 5H (625p) / 3H (NTSC) / 2.5H (PAL)
Output Connector: BNC (BLACK 1, 2/BLACK 3, 4/BLACK 5, 6)
Number of Outputs: 2 each
Timing Variable Range
• H-PHASE: Up to ±1 line-1 dot
• V-PHASE: Up to ±1 frame-1 line
• F-PHASE: Up to ±5 frames (depends on the input signal format.)



LT 443D-HD HD-SDI UNIT
LT 443D-HDB (HD-SDI Out x 2、HD-SDI Black Out x 2) UNIT

The LT 443D-HD (HD-SDI Unit) and LT 443D-HDB (HD-SDI & BLACK Unit) add the capability to output 14 types of HD-SDI signal formats to the LT 443D mainframe.
Various functions (e.g., ID character display, simple motion pictures, embedded audio, NATURAL picture Pattern *1) are provided.
The LT 443D-HDB (HD-SDI & BLACK Unit) can output HD-SDI black signal independently of the HD-SDI test signals.
*1:The option should be installed.

SPECIFICATIONS (LT 443D-HD/HDB)

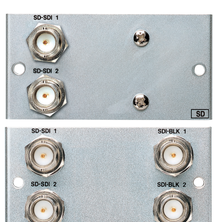
Output
• HD-SDI Video Output: 1 system, 2 outputs (75 Ω, BNC)
• HD-SDI Black Output: 1 system, 2 outputs (75 Ω, BNC)
(The HD-SDI black signal is only output when the LT 443D-HDB is installed.)

Specifications
• Specifications: Conforms to SMPTE 240M/274M/296M standards

SDI Characteristics
• Bit Rate: 1.485 Gbps, 1.485/1.001 Gbps
• Output Amplitude: 800 mVp-p ±10%
• Overshoot: ≤ 10 %
• Rise and Fall Time: ≤ 270 ps (20 % to 80 %)
• Return Loss: ≥ 15 dB (5 MHz to 742.5 MHz)
≥ 10 dB (742.5 MHz to 1.485 GHz)

Function
• Applicable Format: 1035i/60, 1035i/59.94,
1080i/60, 1080i/59.94, 1080i/50,
1080p/30, 1080p/29.97, 1080p/25,
1080p/24, 1080p/23.98,
1080PsF/24, 1080PsF/23.98,
720p/60, 720p/59.94
• Test Patterns: COLOR BAR 100 %, COLOR BAR 75 %, MULTIFORMAT COLOR BAR (ARIB STD-B28) FLAT FIELD 100 %, FLAT FIELD 50 %, FLAT FIELD 0 %, LINE SWEEP 100 %, MULTI BURST 100 %, BOWTIE 100 %, RAMP, SHALLOW RAMP, 10 STEP, PULSE & BAR, CHECK FIELD, RED RASTER 100 %, CROSS & DOT, MONOSCOPE
• Variable Timing
Variable Range: Entire frame range
Variable In V: Line steps
H: Clock steps (74.25 MHz or 74.25/1.001 MHz)
• Simple Motion Picture Mode (Scroll)
Direction: 8 directions (vertical, horizontal, diagonal)
Speed (Range, Resolution)
Field Frame Interlace: Variable in field steps
V Interlace: 0 to 256 lines in 2 line steps
H Common: 0 to 256 dots in 4 dot steps
• ID Character: ID characters can be displayed at the arbitrary position on the screen.
• Embedded Audio
Number of Channels Embedded:
8 channels (4 channels x 2 groups)
Each group can be set ON/OFF
Sampling Frequency: 48 kHz (sync to video signal)
Resolution: 20 bits, 24 bits, selectable
Preemphasis: OFF, 50/15 µs, CCITT, selectable (CS bit is only selected.)
Frame Number: None
Frequency: 50, 100, 150, 200, 250, 300, 400, 500, 600, 750, 800, 1.0 k, 1.2 k, 1.5 k, 1.6 k, 2.0 k, 2.4 k, 3.0 k, 3.2 k, 4.0 k, 4.8 k, 5.0 k, 6.0 k, 8.0 k, 9.6 k, 10 k, 12 k, 15 k, 16 k, 20 kHz, silence
Level: -60 to 0 dBFS (settable in 1 dB steps)
*Frequency, level, and audio click can be set for each channel.
*When the CHECK FIELD pattern is selected, no audio signal is embedded.

HD-SDI Black Output Mode (LT 443D-HDB only)
• Displayable Pattern
Flat Field: 0 %, 40 %, 50 % (selectable)



LT 443D-SD SD-SDI (4:2:2 COMPONENT) UNIT
LT 443D-SDB (SD-SDI Out x 2、SD-SDI Black Out x 2) UNIT

The LT 443D-SD (SD-SDI Unit) and LT 443D-SDB (SD-SDI & BLACK Unit) add the capability to output 525/625 line format SD-SDI signal (4:2:2 component signal) to the LT 443D mainframe.
Various functions (e.g., Id character display, simple motion pictures, embedded audio, NATURAL picture pattern *1) are provided.
The LT 443D-SDB (SD-SDI & BLACK Unit) can output SD-SDI black signal independently of the SD-SDI test signals.
*1: The option 70 should be installed.

SPECIFICATIONS (LT 443D-SD/SDB)

Output
• SD-SDI Video Output: 1 system, 2 outputs (75 Ω, BNC)
• SD-SDI Black Output: 1 system, 2 outputs (75 Ω, BNC)
(The SD-SDI black signal is only output when the LT 443D-SDB is installed.)

Specifications
• Specifications: Conforms to ITU-R BT. 601, SMPTE 125M standards
Conforms to ITU-R BT. 656, SMPTE 259M standards

SDI Characteristics
• Bit Rate: 270 Mbps
• Output Amplitude: 800 mVp-p ±10 %
• Overshoot: ≤ 10 %
• Rise and Fall Time: 0.4 to 1.5 ns (20 % to 80 %)
• Return Loss: ≥ 15 dB (5 MHz to 270 MHz)

Function
• Applicable Format: 525i/59.94-270 MHz, 625i/50-270 MHz
• Test Patterns: COLOR BAR 100%, COLOR BAR 75%, EBU COLOR BAR, BBC COLOR BAR, SMPTE COLOR BAR, RAMP & COLOR, FLAT FIELD 100%, FLAT FIELD 50%, FLAT FIELD 0%, FIELD ID, CROSSHATCH, LINE SWEEP 100%, LINE SWEEP 60%, MULTIBURST 100%, MULTIBURST 60%, OVER SIZE RAMP, DIGITAL LIMIT RAMP, SHALLOW RAMP, 10 STEP, CHECK FIELD, MONOSCOPE, BOWTIE 100%, PULSE & BAR, RED RASTER, MULTIPULSE
• Variable Timing
Variable Range: Entire frame range
Variable In V: Line steps
H: Clock steps (27 MHz)
• Simple Motion Picture Mode (Scroll)
Direction: 8 directions (vertical, horizontal, diagonal)
Speed (Range, Resolution)
Field Frame: Variable in field steps
V: 0 to 256 lines in 2 line steps
H: 0 to 256 dots in 4 dot steps
• ID Characters
Number of Characters: Up to 20
Size: 32 x 32 dots, 64 x 64 dots, selectable
• Embedded Audio
Number of Channels Embedded: 8 channels (4 channels x 2 groups)
Each group can be set ON/OFF respectively.
Sampling Frequency: 48 kHz (sync to video signal)
Resolution: 20 bits, 24 bits, selectable
Preemphasis: OFF, 50/15 µs, CCITT, selectable(CS bit is only selected.)
Frame Number: ON/OFF, selectable
Frequency: 50, 100, 150, 200, 250, 300, 400, 500, 600, 750, 800, 1.0 k, 1.2 k, 1.5 k, 1.6 k, 2.0 k, 2.4 k, 3.0 k, 3.2 k, 4.0 k, 4.8 k, 5.0 k, 6.0 k, 8.0 k, 9.6 k, 10 k, 12 k, 15 k, 16 k, 20 kHz, silence
Level: -60 to 0 dBFS (settable in 1 dB steps)
*Frequency, level, and audio click can be set to each channel.
*When the CHECK FIELD pattern is selected, no audio signal is embedded.

SD-SDI Black Output Mode (LT 443D-SDB only)
• Displayable Pattern
Flat Field: 0 %, 40 %, 50 % (selectable)