



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

The LT 443D Signal Generator can be flexibly used for the multiformal digital broadcast systems. Various plug-in units enable the output of SDI signals (i.e., HDTV, SDTV), sync signals, and analog signals. By using these 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; user cannot replace the unit.

• Applicable to multiformal HDTV

For the SDI signals, 14 HDTV 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 multiformal 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.

• Reading logo mark data

■ OPTION

LT 443D-70 (NATURAL Picture Memory: Option 70)

This option adds the NATURAL picture pattern output capability to the LT 443D mainframe.

A compact flash memory card is used as an additional memory to store the NATURAL picture pattern.

LT 443D SPECIFICATIONS

Compartment Number of compartments ID Function	4 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 Function	Compact flash memory card (CFA TYPE-1) *3 Storing/reading preset data Reading logo mark data 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 *4 The NATURAL picture function is only usable when the LT 443D-70 Option is installed in the mainframe.
External Interface Ethernet USB (Universal Serial Bus)	10Base-T/100 Base-T (Automatic selection) Applicable to USB 1.1 This function will be supported.
General Specifications Environmental Conditions Operating Temperature Range Operating Humidity Range Spec-Guaranteed Temperature Range Spec-Guaranteed Humidity Range Operating Environment Operating Altitude Overvoltage Category Pollution Degree Power Requirements Power Consumption Dimensions and Weight	0 to 40 °C ≤ 90% RH (without condensation) 10 to 35 °C ≤ 85% RH (without condensation) Indoor use Up to 2000 m II 2 90 to 250 VAC, 50/60 Hz Approx. 150 W max. (Approx. 75 W max. *5) 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. 16 3/4 (W) x 1 3/4 (H) x 22 (D) in., 15.4 lbs
Accessories	Power cord.....1 Cover/Inlet stopper1 Rack Support (right and Left)1 Screw (for rack support)4 Rubber Feet.....5 Logo Mark Software CD-R.....1 Instruction manual1

LT 443D-GLA GENLOCK UNIT

Plug-In Unit For LT 443D



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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, black burst with 10-field sequence identification conforming to the SMPTE 318M standards is provided.

The instrument continues operation since the flywheel mode is provided even if the external reference signal is accidentally removed in genlock mode. By logging the genlock status, the time can be obtained when the external reference signal is removed. The log information can be stored on

the CF CARD.

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.

<p>Genlock Function</p> <p>Loop-Through Input</p> <p>Input Configuration</p> <p>Return Loss</p> <p>Reference Input Signal</p> <p>Reference Input Signal Level</p> <ul style="list-style-type: none"> • HDTV • 525p/625p • NTSC • PAL <p>Operation Modes</p> <ul style="list-style-type: none"> • AUTO • MANUAL <p>Genlock Timing Variable Range</p> <ul style="list-style-type: none"> • H-PHASE (FINE) • H-PHASE (COARSE) • V-PHASE • F-PHASE 	<p>BNC connector, 75 Ω loop-through</p> <p>≥ 30 dB (0.3 MHz to 30 MHz)</p> <p>HDTV tri-level sync signal conforming to SMPTE 240M/274M/296M standards</p> <p>525p/625p analog sync signal conforming to SMPTE 293M/ITU-R BT 1358 standards</p> <p>NTSC black burst signal conforming to EBU N14/SMPTE RP-154/SMPTE 170M/SMPTE 318M standards</p> <p>PAL black burst signal conforming to ITU-R BT. 470-6 standards</p> <p>Positive polarity: 300 mV</p> <p>Negative polarity: -300 mV</p> <p>-300 mV</p> <p>-286 mV</p> <p>-300 mV</p> <p>AUTO and MANUAL modes are provided for selecting INT or EXT mode.</p> <p>Fine adjustment between the H-PHASE (COARSE) steps.</p> <p>±1/2 line with respect to the input signal</p> <p>±1 frame with respect to the input signal</p> <p>Up to ±5 frames with respect to the input signal.</p> <p>(Variable range depends on the input signal format.)</p>	<p>Sync Level (into 75 Ω)</p> <ul style="list-style-type: none"> • HDTV • 525p • 625p • NTSC • PAL <p>Rise and fall times</p> <ul style="list-style-type: none"> • HDTV • 525p • 625p • NTSC • PAL <p>Horizontal Sync Width</p> <ul style="list-style-type: none"> • 1125-Line Format • 750-Line Format • 525p • 625p • NTSC/PAL <p>Vertical Sync Width</p> <p>Output Connector</p> <p>Number of Outputs</p> <p>Timing Variable Range</p> <ul style="list-style-type: none"> • H-PHASE • V-PHASE • F-PHASE 	<p>N14/SMPTE RP-154/SMPTE 170M/SMPTE 318M standards</p> <p>PAL black burst signal conforming to ITU-R BT. 470-6 standards</p> <p>Positive polarity: 300 mV ±6 mV</p> <p>Negative polarity: -300 mV ±6 mV</p> <p>-300 mV ±6 mV</p> <p>-300 mV ±6 mV</p> <p>40 IRE ±1 IRE</p> <p>-300 mV ±6 mV</p> <p>54 ns ±20 ns</p> <p>70 ns ±10 ns</p> <p>100 ns ±10 ns</p> <p>140 ns ±10 ns</p> <p>200 ns ±10 ns</p> <p>Positive polarity: 593 ns ±40 ns</p> <p>Negative polarity: 593 ns ±40 ns</p> <p>Positive polarity: 539 ns ±40 ns</p> <p>Negative polarity: 539 ns ±40 ns</p> <p>2.35 μs ±0.05 μs</p> <p>2.35 μs ±0.1 μs</p> <p>4.7 μs ±0.1 μs</p> <p>5H (HDTV) / 6H (525p) / 5H (625p) / 3H (NTSC) / 2.5H (PAL)</p> <p>BNC</p> <p>1 each</p> <p>Up to ±1 line-1 dot</p> <p>Up to ±1 frame-1 line</p> <p>Up to ±5 frames (depends on the input signal format.)</p>
<p>Analog Sync Signal Output</p> <p>BLACK 1/BLACK 2/BLACK 3 Output Format</p>	<p>HDTV tri-level sync signal conforming to SMPTE 240M/274M/296M standards</p> <p>525p/625p analog sync signal conforming to SMPTE 293M/ITU-R BT 1358 standards</p> <p>NTSC black burst signal conforming to EBU</p>		

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

Plug-In Unit For LT 443D



RoHS

The LT 443D-HD HD-SDI Unit adds the 14 format HD-SDI signal output capability to the LT 443D mainframe. Various functions (e.g., ID character, simple motion pictures, embedded audio, NATURAL picture pattern*) are provided.

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

<p>Output</p> <ul style="list-style-type: none"> • HD-SDI Video Output Specifications • Specifications <p>SDI Characteristics</p> <ul style="list-style-type: none"> • Bit Rate • Output Amplitude • Overshoot • Rise and Fall Time • Return Loss <p>Function</p> <ul style="list-style-type: none"> • Applicable Format <p>Test Patterns</p>	<p>1 system, 2 outputs (75 Ω, BNC)</p> <p>Conforms to SMPTE 240M(Except for Return Loss) /274M/296M standards</p> <p>1.485 Gbps, 1.485/1.001 Gbps</p> <p>800 mVp-p ±10%</p> <p>≤ 10 %</p> <p>≥ 270 ps (20 % to 80 %)</p> <p>≥ 15 dB (5 MHz to 742.5 MHz)</p> <p>≥ 10 dB (742.5 MHz to 1.485 GHz)</p> <p>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</p> <p>The following formats will be supported: 720p/29.97, 720p/24, 720p/23.98, 720p/50, 720p/30, 720p/25</p> <p>COLOR BAR 100 %, COLOR BAR 75 %, MULTIFORMAT COLOR BAR (ARIB STD-B28) FLAT FIELD 100 %,</p>	<ul style="list-style-type: none"> • Variable Timing • Variable Range • Variable In V • H • Simple Motion Picture Mode (Scroll) • Direction • Speed (Range, Resolution) • Field Frame Interlace • V Interlace • H Common • ID Character • Embedded Audio • Number of Channels Embedded • Sampling Frequency • Resolution • Preemphasis • Frame Number • Frequency • Level 	<p>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</p> <p>Entire frame range</p> <p>Line steps</p> <p>Clock steps (74.25 MHz or 74.25/1.001 MHz)</p> <p>8 directions (vertical, horizontal, diagonal)</p> <p>Variable in field steps</p> <p>0 to 256 lines in 2 line steps</p> <p>0 to 256 dots in 4 dot steps</p> <p>ID characters can be displayed at the arbitrary position on the screen.</p> <p>8 channels (4 channels x 2 groups)</p> <p>Each group can be set ON/OFF</p> <p>48 kHz (sync to video signal)</p> <p>20 bits, 24 bits, selectable</p> <p>OFF, 50/15 μs, CCITT, selectable (CS bit is only selected.)</p> <p>None</p> <p>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</p> <p>-60 to 0 dBFS (settable in 1 dB steps)</p> <p>*Frequency, level, and audio click can be set to each channel.</p> <p>*When the CHECK FIELD pattern is selected, no audio signal is embedded.</p>
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LT 443D-BL ANALOG BLACK UNIT

Plug-In Unit For LT 443D



The LT 443D-BL Analog Black Signal Unit adds the 20 HDTV format 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 format and output signal timing can be respectively set 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.

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<p>Analog Sync Signal Output BLACK 1, 2/BLACK 3, 4/BLACK 5, 6 Format</p> <p>Sync Level (into 75 Ω)</p> <ul style="list-style-type: none"> • HDTV <ul style="list-style-type: none"> • 525p • 625p • NTSC • PAL <p>Rise and fall times</p> <ul style="list-style-type: none"> • HDTV • 525p 	<p>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</p> <p>Positive polarity: 300 mV ±6 mV Negative polarity: -300 mV ±6 mV -300 mV ±6 mV -300 mV ±6 mV 40 IRE ±1 IRE -300 mV ±6 mV</p> <p>54 ns ±20 ns 70 ns ±10 ns</p>	<ul style="list-style-type: none"> • 625p • NTSC • PAL <p>Horizontal Sync Width</p> <ul style="list-style-type: none"> • 1125-Line <ul style="list-style-type: none"> • 750-Line <ul style="list-style-type: none"> • 525p • 625p • NTSC/PAL <p>Vertical Sync Width</p> <p>Output Connector</p> <p>Number of Outputs</p> <p>Timing Variable Range</p> <ul style="list-style-type: none"> • H-PHASE • V-PHASE • F-PHASE 	<p>100 ns ±10 ns 140 ns ±10 ns 200 ns ±10 ns</p> <p>Positive polarity: 593 ns ±40 ns Negative polarity: 593 ns ±40 ns Positive polarity: 539 ns ±40 ns Negative polarity: 539 ns ±40 ns 2.35 μs ±0.05 μs 2.35 μs ±0.05 μs 4.7 μs ±0.1 μs 5H (HDTV) / 6H (525p) / 5H (625p) / 3H (NTSC) / 2.5H (PAL) BNC (BLACK 1, 2/BLACK 3, 4/BLACK 5, 6) 2 each</p> <p>Up to ±1 line-1 dot Up to ±1 frame-1 line Up to ±5 frames (depends on the input signal format.)</p>
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LT 443D-SD SD-SDI UNIT/LT 443D-SDB (SD-SDI Out x 2, SD-SDI Black Out x 2) UNIT

Plug-In Unit For LT 443D



The LT 443D-SD SD-SDI Unit adds the 525/625 line format SD-SDI signal (4:2:2 component signal) output capability to the LT 443D mainframe. Various functions (e.g., ID character, simple motion pictures, embedded audio, NATURAL picture pattern*) are provided.

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

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<p>Output</p> <ul style="list-style-type: none"> • SD-SDI Video Output Specifications • Specifications <p>SDI Characteristics</p> <ul style="list-style-type: none"> • Bit Rate • Output Amplitude • Overshoot • Rise and Fall Time • Return Loss <p>Function</p> <ul style="list-style-type: none"> • Applicable Format • Test Patterns 	<p>1 system, 2 outputs (75 Ω, BNC)</p> <p>Conforms to ITU-R BT. 601, SMPTE 125M standards Conforms to ITU-R BT. 656, SMPTE 259M standards</p> <p>270 Mbps 800 mVp-p ±10 % ≤ 10 % 0.4 to 1.5 ns (20 % to 80 %) ≥ 15 dB (5 MHz to 270 MHz)</p> <p>525i/59.94-270 MHz, 625i/50-270 MHz 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</p>	<ul style="list-style-type: none"> • Variable Timing • Variable Range • Variable In • V • H <ul style="list-style-type: none"> • Simple Motion Picture Mode (Scroll) • Direction • Speed (Range, Resolution) • Field Frame • V • H <ul style="list-style-type: none"> • ID Characters • Number of Characters • Size <ul style="list-style-type: none"> • Embedded Audio • Number of Channels Embedded <p>Sampling Frequency</p> <p>Resolution</p> <p>Preemphasis</p> <p>Frame Number</p> <p>Frequency</p> <p>Level</p>	<p>Entire frame range Line steps Clock steps (27 MHz)</p> <p>8 directions (vertical, horizontal, diagonal)</p> <p>Variable in field steps 0 to 256 lines in 2 line steps 0 to 256 dots in 4 dot steps</p> <p>Up to 20 32 x 32 dots, 64 x 64 dots, selectable</p> <p>8 channels (4 channels x 2 groups) Each group can be set ON/OFF respectively. 48 kHz (sync to video signal) 20 bits, 24 bits, selectable OFF, 50/15 μs, CCITT, selectable(CS bit is only selected.) ON/OFF, selectable 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 -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.</p>
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LT 443D-AA ANALOG AUDIO UNIT

Plug-In Unit For LT 443D



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.

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<p>Output</p> <ul style="list-style-type: none"> • Number of Outputs • Output Impedance • Output Amplitude • Output Amplitude Accuracy • Output Amplitude Flatness • Output Connector 	<p>2 600 Ω, balanced 0.775 Vrms (into 600 Ω at 0 dBm) ±0.5 dB (at 1 kHz) ±0.5 dB (1 kHz ref.) XLR-3P x 2</p>	<p>Function</p> <ul style="list-style-type: none"> • Sampling Frequency • Frequency <ul style="list-style-type: none"> • Level 	<p>48 kHz (Sync to video signal) 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 -40 to 4 dBm (settable in 1 dBm steps)</p>
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LT 443D-DA DIGITAL AUDIO UNIT

Plug-In Unit For LT 443D



RoHS

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.

<p>Output</p> <ul style="list-style-type: none"> • AES/EBU Digital Audio Output <ul style="list-style-type: none"> Number of Outputs Output Amplitude Output Connector • Silence Signal (DARS grade 2) Output <ul style="list-style-type: none"> Number of Outputs Output Amplitude Output Connector • 48 kHz Word Clock <ul style="list-style-type: none"> Number of Outputs Output Amplitude Output Connector <p>Signal Specifications</p> <ul style="list-style-type: none"> • Specifications 	<p>4 (2-channel output) 1 Vp-p ±0.1 V (into 75 Ω) BNC</p> <p>1 (2-channel output) 1 Vp-p ±0.1 V (into 75 Ω) BNC</p> <p>1 1 Vp-p ±0.1 V (into 75 Ω), 5 V CMOS, selectable BNC</p> <p>ANSI S4.40 (AES3-1992), AES 11-1997 SMPTE 276M, AES-3id-2001</p>	<p>Function</p> <ul style="list-style-type: none"> • Sampling Frequency • Resolution • Preemphasis • Frequency <ul style="list-style-type: none"> • Level • Audio Click • Output ON/OFF • Timing Variable Range 	<p>48 kHz (sync to video signal) 20 bits, 24 bits, selectable OFF, 50/15 μs, CCITT, selectable (CS bit can only be selected.) 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 -60 to 0 dBFS (settable in 1 dB steps) 1, 2, 3, 4 sec, none Selectable</p> <p>±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 settings are common to the digital audio, silence and word clock signals. *Frequency, level, and audio click can be set to each channel. Other items (except timing) can be respectively set to the 2-channel output.</p>
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LT 443D-CS ANALOG COMPOSITE UNIT

Plug-In Unit For LT 443D



RoHS

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.

<p>Test Signal Output</p> <ul style="list-style-type: none"> • Format <p>• Pattern</p> <p>• NATURAL Picture *5</p> <p>• APL MODE</p> <p>Time Interval</p> <p>• ID Character</p> <p>Number of Characters</p> <p>Size</p> <p>Display Position</p> <p>Blinking</p>	<p>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</p> <p>*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. 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, MOD 10 STEP, RAMP, MOD RAMP, MONOSCOPE, RED RASTER, WINDOW, PULSE & BAR Up to five screens of 24-bit full color BMP file can be simultaneously switched.</p> <p>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 %.</p> <p>1 to 20 seconds (settable in one second steps)</p> <p>Up to 20 32 x 32 dots, 64 x64 dots, selectable Arbitrary position on the screen. OFF, 1 to 10 seconds (settable in one second steps)</p>	<ul style="list-style-type: none"> • Simple Motion Picture Function <ul style="list-style-type: none"> Direction Speed • Timing Variable <ul style="list-style-type: none"> H-PHASE V-PHASE F-PHASE • Number of Outputs • Black Signal Output • format • Output Signal • Format • Timing Variable <ul style="list-style-type: none"> H-PHASE V-PHASE F-PHASE • Number of Outputs • Signal Level Horizontal Drive Pluse Output <ul style="list-style-type: none"> • Format • Signal Level • Signal Polarity • Timing Variable <ul style="list-style-type: none"> H-PHASE • Number of Outputs Vertical Drive Pluse Output <ul style="list-style-type: none"> • Format • Signal Level • Signal Polarity • Timing Variable <ul style="list-style-type: none"> V-PHASE • Number of Outputs 	<p>8 directions (up, down, left, right, and combinations) 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. The timing of OUTPUT 1 and 2 can be varied simultaneously. Up to ±1 line-1 dot Up to ±1 frame-1 line NTSC:Up to ±5 frames PAL: UP to ±2 frames 2</p> <p>Depends on the test signal format. (Supports the field Reference and 10 field ID) Analog black burst The timing of OUTPUT 1 and 2 can be varied simultaneously.</p> <p>Up to ±1 line-1 dot Up to ±1 frame-1 line NTSC:Up to ±5 frames PAL: UP to ±2 frames 2 Systems (one each) 1 Vp-p (into 75 Ω)</p> <p>Depends on the test signal format. 2 Vp-p (into 75 Ω) Negative</p> <p>Up to ±1 line-1 dot 1</p> <p>Depends on the test signal format. 2 Vp-p (into 75 Ω) Negative</p> <p>Up to ±1 frame-1 line 1</p>
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