

VIDEO MULTIFORMAT PATTERN GENERATOR

29 formats of DTV signals conforming to ISDB-ATSC-DVB Standards throughout the world

CE
Upon request



LT 448 MULTIFORMAT PATTERN GENERATOR

GENERAL

The LT 448 Multiformat Pattern Generator is designed to output analog component and composite signals applicable to the DTV systems.

The test patterns generated are monoscope, color bar, crosshatch, gray scale, circle, character, and much more.

FEATURES

■ Applicable to multiformat

The 17 formats of component signals are provided for DTV conforming to ISDB, ATSC, and DVB standards based on 1920 x 1080, 1280 x 720, 720 x 480, and 720 x 576 formats.

The NTSC/PAL/SECAM composite output and VGA, used for a computer monitor, are provided. These 29 formats are suitable for production line applications of projectors, etc.

■ G, B, R/Y, P_B, P_R signal output

Two component signal formats (i.e., G, B, R/Y, P_B, P_R) can be selected.

■ Sync signal output

CS (tri-level or binary level), HD, and VD sync signals are output.

■ Monoscope pattern

Monoscope patterns (i.e., 16:9 for HDTV, 4:3 for SDTV interlace, 16:9 (S) for SDTV progressive) suitable for inspecting resolution is provided as standard for the format applicable to DTV.

■ S connector

Since an S connector is provided to output Y/C separation signals, this instrument is suitable for adjusting and inspecting an equipment with S connector. The S connector identifies S1 and S2 signals.

■ D connector

The D5 output conforming to JEITA CP-4120 standards is provided as standard.

■ Preset/recall function

Up to 100 setting conditions of formats and patterns can be stored.

■ RS232C interface

This instrument can be remotely controlled by using a personal computer.

■ Remote controlling address

The address to be recalled can be incremented or decremented by grounding the remote connector pin.

■ Signal generator in a digital technology

The digital signal generator produces highly stable and accurate signals (except audio signals).

■ DVI connector

DVI-D connector conforming to DDWG standards is provided as standard.

■ NATURAL PICTURE pattern is optionally equipped as factory option.

■ LT 448 REAR PANEL



SPECIFICATIONS

LT 448

Video Signal

Video Data Quantization Parameter

Number of Bits

(Common to G/Y, B/P_B, R/P_R): 8 bits (except sync signals)

Component Signal

* Specifications are common to both HDTV and SDTV unless otherwise noted.

Specifications

HDTV: Conforms to SMPTE PR160 standards.
SDTV: Conforms to EBU-N10, SMPTE 253M standards.

Video Signal Format: G, B, R or Y, P_B, P_R can be selected via the front panel controls.

Output Impedance: 75 Ω

Output Connector: BNC, 15-pin mini D-sub, D connector, simultaneous output

Number of Outputs

BNC (G, B, R/Y, P_B, P_R, selectable): 2

15-pin Mini D-sub: 1

D Connector: 1

Sync Signal

Tri-Level

HDTV: Added to G/Y, B/P_B, and R/P_R

Binary Level

SDTV: Added to G/Y

Output Control Function

Sync Signal ON/OFF: Settable for G, B, R

INVERT: Inverts pattern.

Composite Signal

* In NTSC system, specifications are common to NTSC-M (USA) and NTSC-J (Japan) unless otherwise noted.

Specifications: Conforms to SMPTE 170M, ITU-R BT.470 standards

Color System: NTSC, NTSC 4.43
 PAL, PAL-M, PAL-N, PAL-60, SECAM

Setup Level: 0 % fixed for monoscope pattern

NTSC-M, PAL-M: 7.5 %

NTSC-J, NTSC 4.43, PAL,

PAL-N, PAL-60: 0 %

SECAM: 0 %

Output Impedance: 75 Ω

Output Connector: BNC, RCA jack

Number of Outputs: 1 each

Output Control Function

INVERT: Inverts luminance only.

Y/C Separation Signal

Specifications: Conforms to JEITA CPR-1201 standards

Signal Specifications: Same as the composite signal (except NTSC-J)

Output Connector: S connector

Number of Outputs: 1

Aspect Ratio ID Signal: Superimposed on the C signal in NTSC-J mode

Output Impedance in DC: 10 kΩ ±3 kΩ

Aspect Ratio ID Signal Voltage: 0 V fixed for all formats (except NTSC-J)

S1 (squeeze signal output): 5 V

S2 (letter box signal output): 2.2 V

4.3 Signal Output: 0 V

Output Control Function

INVERT: Inverts luminance only.

Computer Monitor Signal

Specifications: Conforms to VESA STANDARDS

Video Signal Format: G, B, R

Output Impedance: 75 Ω

Output Connector: BNC, 15-pin mini D-sub, simultaneous output

Number of Outputs

BNC (G, B, R Only): 2

15-pin Mini D-sub: 1

Sync Signal

Binary Level: Added to G

Output Control Function

SYNC ON G: ON/OFF, selectable

INVERT: Inverts pattern.

D Connector Output (Applicable to D5)

Specifications: Conforms to JEITA CP-4120 (D1/D2/D3/D4/D5 outputs), RC-5237 standards.

Video Signal

Signal Specifications: Same as the component signal

Format: G, B, R or Y, P_B, P_R can be selected via the front panel controls.

Output: Always output; does not detect whether a plug is inserted.

DVI Output

Specifications: Conforms to DDWG (Digital Display Working

Signal Format: Group) DVI standards.
Applicable Format: Single Link T.M.D.S (digital signal only)
 VGA, SVGA, XGA
 HDTV (except 1080p/60, 1080p/50, 720p/24)
 SDTV (except 480i/60, 576i/50)
DDC Function: Not available
HOT PLUG Detection: Not available
Output Control Function
INVERT: Inverts pattern.
Output Connector: DVI-D
Number of Outputs: 1
G, B, R Level Control Function: G, B, R output level can be respectively adjusted by using the screwdriver adjustment on the bottom.
Adjustable Range: 0 to 1.0 Vp-p (into 75 Ω load, active picture)

Sync Signal Output

CS Output

Output Impedance: 75 Ω

Output Connector: BNC

Number of Outputs: 2

HD Output

Level: TTL level

Output Connector: BNC, 15-pin mini D-sub

Number of Outputs

BNC: 2

15-pin Mini D-sub: 1

Output Polarity: Negative (positive for SVGA, SXGA)
 Selectable in user setting mode

VD Output

Level: TTL level

Output Connector: BNC, 15-pin mini D-sub

Number of Outputs

BNC: 2

15-pin Mini D-sub: 1

Output Polarity: Negative (positive for SVGA, SXGA)
 Selectable in user setting mode

Audio Signal

Frequency: OFF/1 kHz/400 Hz, selectable

Output Level: 1.2 Vp-p ±0.12 V (into 600 Ω load)

Output Impedance: 600 Ω

Output Connector: RCA jack

Number of Outputs: 2 each

Control Mode

Startup Memory: Front panel settings are stored in the internal memory when power is turned on.

Preset/Recall: Up to 100 front panel settings (address 00 to 99) can be stored/recalled.

Area Settings: Consecutive addresses, out of 100 addresses, can be recalled.

Begin address: BEGIN

End address: END

Remote Control: Front panel controls can be remotely controlled with a personal computer via the RS232C interface.

Address Remote Control Mode: By grounding the connector pin, the address to be recalled can be incremented (INC) or decremented (DEC). The begin address (BEGIN) can also be set by grounding the pin.

User Setting Mode

HD Output, VD Output: Output polarity can be set in each format.

Ramp Pattern: Superimposing this signal on the P_B, P_R output can be set ON/OFF.

Step Pattern: Superimposing this signal on the P_B, P_R output can be set ON/OFF.

Multiburst Pattern: Superimposing this signal on the P_B, P_R output can be set ON/OFF.

Environmental Conditions

Operating Temperature: 0 to 40 °C

Operating Humidity: ≤90 % RH (without condensation)

Spec-Guaranteed Temperature: 10 to 30 °C

Spec-Guaranteed Humidity: ≤85 % RH (without condensation)

Operating Environment: Indoor use

Operating Altitude: Up to 2,000 m

Overvoltage Category: II

Pollution Degree: 2

Power Requirements

90 to 250 VAC, 50/60 Hz, 60 W max.

Dimensions and Weight

426 (W) x 88 (H) x 400 (D) mm
 (excluding projections)
 5.6 kg

Accessories

Power cord.....1
 Instruction manual1

LT 448 Output Format

No.	Format	Standards	Aspect Ratio	Applicable Output Connectors										
				COMPONENT OUT (BNC)		D CONNECTOR (D Connector)		COMPOSITE OUTPUT (BNC, RCA Jack)	Y/C OUTPUT (S Connector)	HD, VD, CS OUTPUT (BNC)	RGB OUT (D Connector)		DVI-D	
				Y, P _B , P _R	RGB	Y, P _B , P _R	RGB				Y, P _B , P _R	RGB		
COMPONENT, HDTV														
01	1080p/59.94	274M	16:9	○	○	○	○			○	○	○		
02	1080i/59.94(30sF)	274M(RP211)	16:9	○	○	○	○			○	○	○	○	
03	1080p/29.97	274M	16:9	○	○	○	○			○	○	○	○	
04	1080p/23.98	274M	16:9	○	○	○	○			○	○	○	○	
05	1080PsF/23.98	RP211	16:9	○	○	○	○			○	○	○	○	
06	1080p/50	274M	16:9	○	○	○	○			○	○	○		
07	1080p/25	274M	16:9	○	○	○	○			○	○	○	○	
08	1080i/50(25sF)	274M(RP211)	16:9	○	○	○	○			○	○	○	○	
09	720p/59.94	296M	16:9	○	○	○	○			○	○	○	○	
10	720p/29.97	296M	16:9	○	○	○	○			○	○	○	○	
11	720p/23.98	296M	16:9	○	○	○	○			○	○	○		
12	720p/50	296M	16:9	○	○	○	○			○	○	○	○	
13	720p/25	296M	16:9	○	○	○	○			○	○	○	○	
COMPONENT, SDTV														
14	480p/60	293M	16:9(S)	○	○	○	○			○	○	○	○	
15	480i/60	601	4:3											
			16:9(S)	○	○	○	○			○	○	○		
			16:9(L)											
16	576p/50	601	16:9(S)	○	○	○	○			○	○	○	○	
17	576i/50	601	4:3											
			16:9(S)	○	○	○	○			○	○	○		
			16:9(L)											
COMPOSITE														
18	NTSC-M	170M	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
19	NTSC-J	170M	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
20	NTSC 4.43	-	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
21	PAL	470	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
22	PAL-M	470	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
23	PAL-N	470	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
24	PAL-60	-	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
25	SECAM	470	4:3							○	○	○		
			16:9(S)											
			16:9(L)											
COMPUTER MONITOR														
26	VGA(640x480)	VESA	4:3	○	○					○	○	○	○	
27	SVGA(800x600)	VESA	4:3		○					○		○	○	
28	XGA(1024x768)	VESA	4:3		○					○		○	○	
29	SXGA(1280x1024)	VESA	5:4		○					○		○	○	

* Output connectors marked with ○ are enabled when the format is selected. Connectors without marking are disabled (i.e., high impedance state) when the format is selected.

* No signal is output from the DVI-D connector when Y, P_B, P_R is selected in the VGA format, however.
* (S):SQUEEZE, (L):LETTER BOX

LT 448 Pattern format

No.	Format	Aspect Ratio	Pattern																		
			Color Bar					Raster	Ramp	Step	Convergence	Crosshatch	Multiburst	Character	Window	Demodulation	Monoscope	Natural Picture (Option)	ANSI Gray Scale	Checker	
			Full Field	Split Field	Multiformat	SD Multi	HD Multi														
COMPONENT, HDTV																					
01	1080p/59.94	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
02	1080i/59.94(30sF)	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
03	1080p/29.97	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
04	1080p/23.98	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
05	1080PsF/23.98	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
06	1080p/50	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
07	1080p/25	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
08	1080i/50(25sF)	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
09	720p/59.94	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	720p/29.97	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	720p/23.98	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	720p/50	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	720p/25	16:9	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COMPONENT, SDTV																					
14	480p/60	16:9(S)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15	480i/60	4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
16	576p/50	16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		16:9(S)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	576i/50	4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
COMPOSITE																					
18	NTSC-M	4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
19	NTSC-J	4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
20	NTSC 4.43	16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
21	PAL	16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
22	PAL-M	16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	PAL-N	16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
24	PAL-60	16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	SECAM	16:9(L)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
		4:3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		16:9(S)	<input type="checkbox"/>				<input type="checkbox"/>			<input type="checkbox"/>											
COMPUTER MONITOR																					
26	VGA(640x480) @60 Hz	4:3	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27	SVGA(800x600) @60 Hz	4:3	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
28	XGA(1024x768) @60 Hz	4:3	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
29	SXGA(1280x1024) @60 Hz	5:4	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

* Patterns marked with circle can be displayed; others are displayed in black.

* (S):SQUEEZE, (L):LETTER BOX