Training Manual for LCD TV "Jasmine 20"

Samsung Electronics Visual Display Div. R&D team





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1. Jasmine 20 Front Panel Buttons



The product colour and shape may vary depending on the model.

O SOURCE ⊡

Toggles between all the available input sources (TV - Ext. - AV - S-Video - PC). In the on-screen menu, use this button as you use the **ENTER** button on the remote control.

Ø MENU

Press to see an on-screen menu of your TV's features.

3 + 🛌 –

Press to decrease or increase the volume. In the on-screen menu, use the + ► - buttons as you use the < and > buttons on the remote control.

④ < C/P. ⊕ >

Press to change channels. In the on-screen menu, use the $\langle C/P. \phi \rangle$ buttons as you use the \wedge and \neg buttons on the remote control. (Without the Remote Control, you can turn on the TV

by using the Channel buttons.)

6 Speakers

⑥ ⁽(Power)

Press to turn the TV on and off.

Power Indicator

Blinks and turns off when the power is on and lights up in stand-by mode.

Remote Control Sensor

Aim the remote control towards this spot on the TV.



1. Jasmine 20 Rear Panel Jacks

Connecting an Aerial or Cable Television Network

To view television channels correctly, a signal must be received by the set from one of the following sources: - An outdoor aerial / A cable television network / A satellite network

O Connecting External A/V Devices

- Connect RCA (optional) or S-VIDEO cable (optional) to an appropriate external A/V device such as VCR, DVD or Camcorder.
- Connect RCA audio cables (optional) to "L AUDIO R" on the rear of your set and the other ends to corresponding audio out connectors on the A/V device.
- Headphone may be connected to the headphone output (2) on the rear of your set. While the head phone is connected, the sound from the built-in speakers will be disabled.

O Connecting Set-Top Box, VCR or DVD

- Connect the VCR or DVD SCART cable (optional) to the SCART connector of the VCR or DVD.
- If you wish to connect both the Set-Top Box and VCR (or DVD), you should connect the Set-Top Box to the VCR (or DVD) and connect the VCR (or DVD) to your set.

O Connecting Computer

- Connect the D- Sub cable (optional) to "PC IN (PC)" on the rear of your set and the other end to the Video Card of your computer.
- Connect the stereo audio cable (optional) to "PC IN (AUDIO)" on the rear of your set and the other end to "Audio Out" of the sound card on your computer.

G Kensington Lock

- The Kensington lock (optional) is a device used to physically fix the system when used in a public place.
- If you want to use a locking device, contact the dealer where you purchased the TV.
- The place of the Kensington Lock may be different depending on its model.



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2. Jasmine 20 Remote Control



- Television Standby button
- Number buttons for direct channel access
- One/Two-digit channel selection
- O I: Volume increase
 O Volume decrease
- Temporary sound switch-off
- G Selects the TV mode directly
- O Displays the main on-screen menu
- Sound effect selection
- Previous channel
- PB: Next channel PB: Previous channel
- Available source selection
- Use to see information on the current broadcast
- B Exit the on-screen menu
- ③ Control the cursor in the menu
- Automatic Power-off
- (D) Picture effect selection
- Sound mode selection

Teletext Functions

- Teletext hold
- B Exit from the teletext display
- Teletext index
- O Teletext sub page
- Teletext display/mix both teletext information and the normal broadcast
- Fastext topic selection
- P: Teletext next page
 P: Teletext previous page
- () Teletext mode selection (LIST/FLOF)
- ③ Teletext reveal
- Teletext store
- ① Teletext size selection

The performance of the remote control may be affected by bright light.

For details, refer to further instructions.

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3. Specification

Model Name	LE20S8
Panel Size Display Size	20" Diagonal (4:3) 408.0 (H) x 306.0 (V) mm
Pixel Pitch	0.51 (H) x 0.51 (V) mm
Frequency Horizontal / Vertical	28 ~ 47 kHz / 50 ~ 75 Hz
PC Resolution (Optimum)	640 × 480 @ 60Hz
Dimension (WxDxH) Body With stand	479.0 x 74.7 x 436.4 mm 479.0 x 226.0 x 463.0 mm
Weight With stand	7.45 kg (16.42 lbs)
Environmental Considerations Operating Temperature Operating Humidity Storage Temperature Storage Humidity	10 °C to 40 °C (50 °F to 104 °F) 10 % to 80 %, non-condensing -20 °C to 45 °C (-4 °F to 113 °F) 5 % to 95 %, non-condensing

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4. Using the TELETEXT Feature

Teletext Decoder



Most set channels carry " teletext ", pages of written information that provide information such as:

- ◆ Television programme times.
- News bulletins and Weather forecasts.
- ♦ Sports results.
- Subtitles for the hard of hearing.

The teletext pages are organized according to six categories:

Part	Contents
Α	Selected page number.
В	Broadcasting station identity.
С	Current page number or search status.
D	Date and time.
E	Text.
F	Status information.

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4. Display the Teletext Information



You can display teletext information at any time, but signal reception must be good. Otherwise:

- Information may be missing.
- Some pages may not be displayed.

To activate the teletext mode and display the contents page:

- 2. Press the TTX/MIX () button to activate the teletext mode.
 - The contents page is displayed. It can be redisplayed at any time by pressing the MENU (I) button.
- 3. Press the TTX/MIX (1/2) button again.
 - The actual broadcast will be displayed simultaneously with the teletext page on the screen.
- **4.** Press the **TV**() button again to exit from the Text display.
- If any broken character appears while Text is being viewed, make sure that the Text language is identical with the language in the "Setup" menu mode. If both languages are different, select the same language with the Text language on the "Setup" menu.

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4. Selecting a Specific Teletext Page



Press the number buttons on the remote control to enter the page number directly:

- Enter the three-digit page number listed in the contents by pressing the corresponding numeric buttons.
- 2. If the selected page is linked with several secondary pages, the secondary pages are displayed in sequence. To freeze the display on a given page, press the --- (I). Press the --- (I) button again to resume.
- 3. Using the various display options:

To display	Press the
Both teletext information and the normal broadcast	TTX/MIX (🗐 🖉)
Hidden text (answers to quiz games, for example)	INFO (😰)
The normal screen	INFO (🗐)
A secondary page, by entering its 4-digit number	DUAL I-II (🖃)
The next page	P 🙆 (🖻)
The previous page	P 🕑 (🖭)
Double-size letters in the:	(🗐)
 Upper half of the screen 	Once
 Lower half of the screen 	+ Twice
Normal screen	 Three times

4. Using Fastext to Select a Teletext Page



The various topics included in the teletext pages are colour-coded, and can be selected by pressing the coloured buttons on the remote control.

- Display the teletext contents page by pressing the TTX/MIX () button.
- Press the coloured button corresponding to the topic that you wish to select (The available topics are listed on the status information line).
- Press the Red button to display the previous page.
 Press the Green button to display the next page.
- Press the **TV** () button again to exit from the Text display.

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4. Storing Teletext Pages



3. 4. 5.

You can store up to four teletext pages to display them later at leisure.

- 1. Select the LIST mode using the SOURCE (=) button.
 - > The SOURCE () button is used to switch between the LIST and FLOF modes.
- 2. Press the coloured button corresponding to the page that will be replaced.
- 3. Enter the new page number using the numeric buttons.
 - Repeat steps 2 and 3 for each page to be stored, using a different coloured buttor e.
- Press the SLEEP (I button until the corresponding blocks blink.

English-17



5. Signal Connections and Pin Assignments

If the monitor signal cable is disconnected, the monitor starts the 'Self-Test' function

15pin D-sub connector

Pin Number	Monitor Side of the 15-Pin Side Signal Cable
1	Video-Red
2	Video-Green
3	Video-Blue
4	GND
5	DDC-return
6	GND-R
7	GND-G
8	GND-B
9	DDC +5V
10	GND-sync/self-test
11	GND
12	DDC data
13	H-sync
14	V-sync
15	DDC clock





Both screen position and size will vary depending on the type of PC monitor and its resolution. The resolutions in the table are recommended. (All resolutions between the supported limits are supported)

Mode	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock Frequency (MHz)	Sync Polarity (H/V)
VGA	720X400	31.469	70.087	28.322	- / +
	640X480	31.469	59.940	25.175	- -
	640X480	37.500	75.000	31.500	- -

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7. Block Diagram

PLUS BLOCK DIAGRAM (For European Model)



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8. Power Flow



9. Troubleshooting (No Power)



9. Troubleshooting (No Picture)





9. Troubleshooting (No Sound)



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No	Function	Action method
1	Hidden Service Function(1) Service PC Auto Color Video Auto Color Reset DLC/MWE Part	 Entering Factory Mode 1) To enter "Service Mode" Press the remote -control keys in this sequence : -If you do not have Factory remote – control POWER OFF -> MUTE -> 1-> 8 -> 2 -> POWER ON 2) If you have Factory remote-control POWER ON -> INFO -> Factory
	SFR PART Sub Adjust UOC Adjust Adjust Option Checksum Panel Information Bus Stop : OFF 2006/01/02 T-pls23nus-1002	PC Auto Color Video Auto Color Reset DLC/MWE Part SFR PART Sub Adjust UOC Adjust Adjust Option Checksum Panel Information Bus Stop : OFF * 2006/04/02: MCLL firmware data
		 *. 2006/01/02: MCU firmware date. *. T-PLUS23NUS-1002: MCU firmware version information (this information must be appended due to a compatibility problem report.) 1) Reset: Factory reset 2) Bus Stop: The communication Line ON / OFF

No	Function	Action method
2	Hidden Service Function (2)	 Move to the (-) / (+) key, select the 'Enter' key. 3) PC Auto Color/ Video Auto Color : in case that color of all screen is wrong, excute the PC Auto color at 16 gray pattern (refer to attach left 16gray pattern) 4) Checksum: MCU firmware checksum information (this information must be appended due to a compatibility problem report.)



No	Function	Action method
2	Hidden Service Function (3)	
	*.When Panel Information selected	6) Dynamic Luma Correction "-" : RF, AV, S_Video -> all store
	DLC/MWE Part NVRAM Reset > DLC- 0-10 0 MWE- 0-1 1 Demo 0-1 0 Brightness+ 0-255 103 Sharpness+ -10-10 1 Hue+ 0-100 50 Saturation+ 0-255 125 R Offset 46 G Offset 50 B Offset 50 B Offset 50 B Gain 51	"+": RF, AV, S_Video -> separate store

No	Function	Action method
2	Hidden Service Function (3) *.When Panel Information selected	
	SFR Part DCXO Sel. 0 DCXO Tune 64 OVMADAPT 0-1 1 OVMTHR 0-3 2 IF Demod 0-63 38 F FI 0-1 0 R0:77 R1:71 R2:81 R3:18 R4:0 R5:1F	7) Special Function Register

No	Function	Action method
2	Hidden Service Function (4) *.When Panel Information selected	8) Sub Adjust of UOC III
	Sub Adjust R Blk Lvl+ 0-63 28 G Blk Lvl+ 0-63 20 Peak Frq/DLY+0-3 0 Peak+ 0-63 40 Soft Clp Lvl- 0-3 0 W Limit- 0-15 8 R White Pnt+ 0-63 31 3 1 B Mhite Pnt+ 0-63 31 AGC T-O- 0-63 23 3 1<	SAMSUN CHAMP IN DIGITAL DISPI

No	Function	Action method
2	Hidden Service Function (5)	
	*.When Panel Information selected	9) UOC Adjustment
	UOC Adjust BKS- 0-1 1 WSx- 0-3 2 0 0 0 20 20 2 0 20 20 20 20 2 2 0 20 20 20 20 2 <td< th=""><th>BKS : Black stretch Wsx : White stretch</th></td<>	BKS : Black stretch Wsx : White stretch
		CHAMP IN DIGITAL DISPL

No	Function	Action method
2	Hidden Service Function (6)	
	*.When Panel Information selected	10) Scaler Adjust
	AdjustR Offset20B Offset20B Offset20C Gain20B Gain20Schr Coring+0-25500FDDDDFDDBBB	SAMSUN

No	Function	Action method
2	Hidden Service Function (7) *.When Panel Information selected	11) Service Channel Memory for Factory
	Service Suwon + America Samex + America Help Menu : On Auto-Auto : Off	ETAMPIN DIGITAL DISPLA
		Visual Display Division

No	Function	Action method
2	Function Hidden Service Function (8) *.When Panel Information selected Service Monitor : 3 Hr Panel : 3 Hr Upper Lamp : 3 Hr Lower Lamp : 3 Hr	 12) Panel Information various function are included in information. Monitor On Time : Power On Time Panel Cycle : Panel On/off time (Power off, Mode change, DPMS on/off) Panel : Panel on Time (when the panel is changed , select the Reset) Lower lamp : Lower lamp on time (when the Lower lamp is changed , select the Reset) Upper lamp : Upper Lamp on time (when the Upper Lamp is changed , select the Reset)
		SAMSU

11. Main PBA



Scart Cable



I/P Board

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12. Panel part



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13. Disassembly(1) – LE20S81BX

- 1. Disassembly stand on the flat desk.
- 2. Before disassembly set , separate other Cables and Power cord.



13. Disassembly(2) – LE20S81BX



 Lamp wire

 LVDS CABLE

 Power harness

 Function harness

 Speaker L/R

2. Disconnect cable from the boards.



13. Disassembly(3) – LE20S81BX



3. Separate the screws



4. Lift up the RPKT



14. EDID input method

SAMSUNG LCD TV support the DDC control JIG. You can see the connection between PC and LCD TV.





EDID input method (Dos Program)



🔀 DDC21 💶 🖂
자동 💽 🗈 💼 🛃 🛃 🖪 🗛
SAMSUNG ELECTRONICS DISPLAY R & D MICOM TEAM : VER 0.9 MCU MODEL EXIT
Mfr DEL Name 0F30 No 31303041 Meek 24th 0F 2001 Ver/Rev 1 / 3
Signal 0.7/0.0 ANALOG RGB COLOR. DPMS support STAND-BY. SUSPEND. OFF.
Gamma 2.20 Size(H/V) 34cm / 27cm Sync support SEP.
Rx 631 Ry 354 Gx 294 Gy 596 Bx 143 By 87 Mx 315 My 330 Black Level ? No
Established timing support 720×400 070Hz o 720×400 088Hz × 640×480 060Hz o 640×480 067Hz × 640×480 072Hz × 640×480 075Hz o 800×600 056Hz × 800×600 060Hz o 800×600 072Hz × 640×480 075Hz o 800×600 056Hz × 800×600 060Hz o 800×600 072Hz × 800×600 075Hz o 832×624 075Hz × 1024×768 1024×768 1024×768 1024×768 1024×768 1024×768 1280×1024 075Hz o 1152×870 075Hz × 1024×768 075Hz × 1024×768 075Hz o 1280×1024 075Hz o
Detailed timing #1 A Y Standard timing # Checksum Fh PIXEL CLK : 108000KHz RESOL.: 1280×1024 N_INTERLACED. FREQ.(H/U) : 64.0KHz/60.0Hz SIZE(H/U) : 338mm/270mm BLANKING(H/U) : 408/42 SYNC OFFSET(H/U) : 48/1 SYNC WIDTH(H/U) : 112/3 BORDER(H/U) : 0/0 NORMAL DISP D_SEP. POL(H/U) : P/P
LOAD FILE FILE SAVE VERIFY EEP WRITE MCU WRITE EEPROM 36 13 key0

- 1. execute "DDC21.exe"
- 2. Click "LOAD FILE"
- 3. Input the File Name
 - -. "VE15.ddc"
 - -. "VC17.ddc"
 - -. "VC20.ddc"

4. Click "WRITE EEPROM"



EDID input method (Dos Program)



Confirm the "OK" Sign

🔀 DDC				
자동 💽 🛄 🖻	🖻 🕑 🖻 🖻	Α		
-				
	! COMM. ERRO	R: Write to I	EEPROM in Analog.	.1
	植栖口 植植	0. 植栖0.	_栢□_ 植栢■_	
	植 植 植 植	栢 栢 栢 <u>栢 栢 栢</u>	植植植植	
	栢 栢	口 栢 D _ 栢栢_	植植植 【植植植	
	植植	盾 栢 栢 栢 栢 栢	植植植植	
	植植 植 植	栢 栢 栢 栢_ 栢 栢_	植植植植 植_植植杠_	
	柿 柿□ 柿	村白 村白 村白	柏口 柏 柏	
	Communication	between PC ar	nd Monitor has be	en
	interruped. Check : Signal	Cable or 'Ir	nterface Board'	
			ESC	key to continue.

Error Massage

: Check the Signal Cable or Interface Board

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EDID input method (Windows Program)

WinDDC BY SAMSUNG I File & Week Config Help	ELEC.Co. [Ver: 4. Exit	.61.10s] Cr	eated: 20030707					<u>_</u> _×	l	
2003/01/01 Open[F5] WEEK[F6]	DDC 💡 Sys Inform Con	In/Out	<u>PQS</u>							
Write Stat	ion	Buyer B	ASIC	File Name					1.Ex	ecute Winddc.exe
3 Afr. Name		Prod. Code		Week		[EDID the oth	ers infomation	1	Prog	ram at PC.
			J			DDC Version	n 4.6	1.10s	2. Cl	ick the Winddc icon.
Upper S/No.						EDID Writed	In terface(MTL-20E	in l	3. Fil	e open.
						Revisio	on of CMS?		4. Se	elect Port#1
Det. Timing		Load ED	ID File What do y	ou want to connect p	ort no	Use USER-D	ELETE function	1?	5. Lo	ad DDC file
3//40.		MTI-20 DDC N	4	© Port # <u>1</u>		Recent D	DC File		File	e Name
Serial No. Input		l	Port #2	- Port #1,2		2			15	inch : VE15
	<u> </u>			(Dual model)		3			17	inch : VC17
			<u>N</u> e:	d [OK]	<u>C</u> ancel	5			20	inch : VC20
			열기				<u>? ×</u>			
Win DDC System Lor	1 On · [Ok]		찾는 위치(!)) 	☐ M173MW		- + 🗈 💣	≣ •		6. CI	ick Next (OK)
			173MWA.D	<u>5</u>					butto	on.
			Ĩ	종류: DDC Documen 크기: 256바이트	Load EDID F	ile What do you	want to conne	ct port no		
					DDC MAHA		Port #1	173MWA.DD	; 	
			파일 이름(<u>N</u>)	: [173MWA,DDC		Port #1	Port #2	J		
Start				DDC Files (*.)		- <u> </u>	Port #1,2 (Dual model)			
Ready				Sca	anner: Key					
						<u>N</u> e×t [[ОК]	<u>C</u> ancel		
					114	— (5			
Start	[INPUT]		Scan OK							SAMSUNG
Ready				Scanner: Keyb'd	Wedge Type Start signal type: I	No Use PQS: No Use				CHAMP IN DIGITAL DISPLAY
									v	isual Display Division

EDID input method (Windows Program)

Write Stat	Inc. [Ann] [] [] [] [] [] [] [] [] []	000
Att: Name Upper S/No. Dat. Timing S/No. Semid No. Input	SAM Prod. Cost D200 Week MH17 H1AK500000 Ox22	EDD the vitres intension DDC Version 4.63,112 EDD Version 6.63,112 EDD Version 6.67,112 Petros: discondentization #1 Petros: discondentization #1 Petros: discondentization #0 Petros: discondentization #1 Petros: discondentization #1 #1: Sim2200.02,#2 #1 #1: Sim2200.02,#2 Stema TDDC #1: Sim2207A.DOC_#2 Stema TDDC #1: Sim2207A.DOC_#2 Stema TDDC #1: Sim2207A.DOC_#2 Stema TDDC #1: Sim2207A.DOC_#2 Stema TDDC
Land File] The Analy Dick Processing Dick Paralog (P) (1) Dick Decay (2) suc- Dick Decay (2) suc- Dick Processing Dick Processing Dick Processing	1780-3783407800C	

Dir & West Config. 8	6 (512) Co. (Perr 413.11+1 Modity 2003-029 Sele: Epi	
Write Stat	and the Config. The Config. The Config. Config	the matel 710MP.DDC
MD. Name	SAM Prof. Code D200 Week	[EDD De offere lefetados] DDC Version 4.63,11a EDD Veloci In EEPPROM
Upper 5/No.	MH17	Flatten, of Infordance/MT12053) #1 Flavision of CMS17 No CM
Dot. Timing BiNo.	H1AK500000	Use USER-DELETE Interaction? Mo
Senial No. Input		0x22 #1 SM205ADC,#2 0x22 #1 SM205ADC,#2
	DDC OK	#1: SM729TA.DOC.#2: SM729TD #1: SM729TA.DOC.#2 #1:
DEC Processing DEC Assing #12 EE DEC Delay 12 Sec DEC Assing #13 The DEC Processing	2004 Willing[128 byte]: Geedf JeffYelfY: Gasett Fac [(Time : 1.4 Seq]	
Dat	(NEVIT) (AUTROT)	
Feady	Scanne (Keyb) I. Webje T	ype 25er right type to the POS No the

7. Select enter button (on Key-Board) After Monitor S/N input.

8. Check "DDC OK".

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Program Upgrade Jig



Connect the parallel Port



Connect Jig to CN905 on PCB Ass'y



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Click "WISP" Icon on Computer



Check " Automatic mode on"

✓ <u>Automatic mode o</u>	DSP		
○ Picasso N1 ● Picasso N2	General Erace Program: - PK26: -	Character	
<u>В</u> гожsе	Write Program: • PK26: •	Character.	
Auto Execute	- ISP status		×
	Blank check on Auto verify on	Elapsed time:	
	No data loaded.		



Click "Browser" button : Select the Code , Click "Auto Execute" button Check Erase and Write OK In "General" window and check Verify OK in "ISP status" window

warWISP		
<u>File Yiew Settings Help</u>		
Flash Memory	DSP	
 Picasso N1 Picasso N2 	Erase Frogram: 01. PK26: 01. Dharacter: 01.	
Browse	Wile Program: 0k PK26: 0k Character: 0k	
Auto <u>E</u> kecute ✓ Always enter ISP ✓ Define delay time ✓ (write) 20 [ms]	ISP status Ready. PK26 ROM data is being verified MISR: 17 56 89 79 50 FC F0 48 96 D4 71 15 09 B2 E4 0E Verify Dk Ready. Character ROM data is being verified MISR: 39 06 F5 90 E5 C9 DD 9C ED D2 96 31 71 D3 38 C0 Verify Dk Ready.	
	□ Blank gheck on Elapsed time: 50.3 sec. □ Auto verfy on □ Data is loaded successfully. [MH17ES(d0316v1003cA3AC) hex]	
🥥 🔯 333 kbits/s Ready .		



Thank You!

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