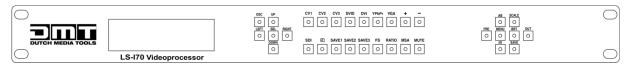
# 101416 LS-170 Video Processor



# **User Manual**



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# Revision

Format	Time	ECO#	Description	Principal
1.0	2011-1-26	0000	Release	Susan

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# 1.0 Safety

The general safety information in this summary is for operating person. Any requirement, please feel freely to contact our service engineer.

	Power Source This product is intended to operate from a power source between 85~265 volts rms . This product is only workable under correct power condition, which is already mark on the back panel of the power.
0 5	High Voltage There are many high voltage components inside.
<u> </u>	<b>Do not Remove Covers and Panels</b> Do not remove Covers in any conditions. There are not any spare components inside for maintenance, so do not maintain this product by userrselves, any requirement, please feel free to contact our service engineer. Keep heavy device from power cord.
Ð	Grounding the Product and Use the Proper Fuse This product is grounded through the grounding conductor of the power cord. To Avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals.
	Keep away from Magnet, Motor, TV and Transformer.
	Guard Against Damp Keep using inside clean and dryness environment, once the device get wet, must remove power cord right now.
	Keep away Exploder Do not operate the device inside dangerous and easy explosive gas, which it may make fire, blast or something without expectation.
	Keep away Pour Liquid and Fragment It is forbid to pour liquid, metal fragment or anything else inside this device to avoid fire and other accident. Once that happens, must remove power cord and try to make it clean before power on again.

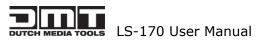


# 2.0 Specification

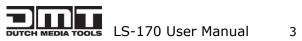
DMT series video processors are designed by the latest high performance image processing technology. DMT can handle following video without limit, include CVBS (Composite) 、S-Video (YC)、YCbCr、YPbPr、RGBHV (VGA) 、DVI-D、 HDMI、SDI (SD-SDI、HD-SDI) and VOIP (Copper RJ45) .

## 2.1 Parameters

Composite BNC Input		
Number of Inputs	3	
Supported Standards	PAL/NTSC; 480i,576i	
Signal Level	1Vpp±3db (0.7V Video+0.3v Sync ) 75ohm	
S-video DIN4 Input		
Number of Inputs	1	
Supported Standards	PAL/NTSC; 480i,576i	
Signal Level	Y:1Vpp±3dB (0.7V Video+0.3v Sync ) 75ohm	
	U/V:0.7Vpp±3dB 75ohm	
YPbPr BNC Input		
Number of Inputs	BNC*3	
Supported Standards	Anologue HD Input	
	480i,576i,480p,576p,720p50,720i60,1080i50,1080p50	
	1080i50,1080i60	
Signal Level	Y:1Vpp±3dB (0.7V Video+0.3v Sync ) 75ohm	
	Pb/Pr:0.7Vpp±3dB 75ohm	
VGA DB15 Input		
Number of Inputs	1	
Connector	Standard DB15 socket	
Supported Standards	VGA-UXGA;	
	1024×768×60, 800×600×60, 640×480×60	
Signal Level	$R_G_B_Hsync_Vsync:0 to 1Vpp \pm 3dB$ (0.7V Video + 0.3v	
	Sync ) 75ohm	
	black level: 300mV Sync-tip: 0V	
DVI Input		
Number of Inputs	1	
Connector	Standard DVI-I socket	
Supported Resolution	SMPTE: 625/25 PAL, 525/29.97 NTSC, 625/50p PAL,	
	525/59.94p	
	NTSC:1080i50,1080i59.94/60,720p50,720p59.94/60	
	VESA: $800 \times 600 \times 60$ Hz, $1024 \times 768 \times 60$ Hz, $1280 \times 768$	



	×60Hz, 1280×1024×60Hz, 1600×1200×60Hz, 1920
	×1080×60Hz, 1920×1080×50Hz
Signal Level	TMDS pwl, single pixel input, 165MHz bandwidth
Standard	HDMI 1.3
SDI Input (Option	al module)
Number of Inputs	1
Connector	BNC
Data Rate Range	19.4Mbps~1.5Gbps
Supported Standards	ITU-R BT.656,ITU-R BT.601,SMPTE 259M, SMPTE 292, SMPTE 297
Equalization)	Belden 1694A 100M HD1.485G, 350m SD 270Mbps
Audio Input	
Number of Inputs	10
Connector	Standard RCA socket
Audio Standard	48Kbps 24bit balance analog audio
DVI Output	
Number of Inputs	1
Connector	Standard DVI-I Interface
Signal Level	TMDS pwl, 165MHz bandwidth
Supported Standards	VESA: 800×600×60Hz, 800×600×75Hz, 1024×768 ×60Hz, 1024×768×75Hz, 1280×1024×60Hz, 1920 ×1080P×60Hz
VGA Output	
Number of Inputs	1
Connector	Standard DB15 socket
Supported Standards	VESA: 800×600×60Hz, 800×600×75Hz, 1024×768 ×60Hz, 1024×768×75Hz, 1280×1024×60Hz, 1920 ×1080P×60Hz
Signal Level	R、G、B、Hsync、Vsync:0 to1Vpp±3dB (0.7V Video+0.3v Sync ) 75ohm black level: 300mV Sync-tip: 0V
Audio Output	
Number of Outputs	1
Connector	Standard 1/4" socket
Audio Standard	48Kbps 24bit balance analog audio
Function	
Source Switch	support every signal alpha key operation
PIP	PIP for SD with HD and HD with HD
AV Sync	supported
Extras	
Communication	RS232 USB TCP/IP
	85-264V 2A IEC-3
Power Supply	



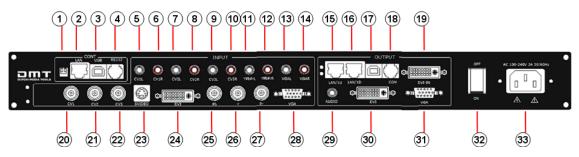
Working Environment	0°C~45°C
Stored Environment	10% to 90%
Product Warranty	1 year

Note:

Specifications are subject to change without notice.

# 3.0 Connection

# 3.1 LS-170 Back Panel



1, Dial the code switch;

 $2 \ 10/100$  interface (copper RJ45). Used to connect the computer by 568B-568A twist-pair;

3、USB interface, Used to connect the computer;

4、RS232 interface (RJ11) for DMT processor. Used to connect the computer;

 $5\mathchar`left 14\ensuremath{\scriptstyle \times}$  Audio interface, support audio signals from DVD player or audio sources;

15-16、Gigabit copper port, connect to LED screen;



- $17\ensuremath{\,{\tiny \ensuremath{{\tiny \ensuremath{{\tiny \ensuremath{{\tiny \ensuremath{{\tiny \ensuremath{{\tiny \ensuremath{{\tiny n}}}}}}}}$  . LED Studio USB Port;
- $18\ensuremath{\,{\scriptscriptstyle \sim}}$  COM Port.

19、Gigabit Transmitter card DVI input, connect to DVI output of LS-170. (This Connection does not support hot-plugging)



20-22、Composite input interface, Composite BNC. Used to input composite signal (PAL, NTSC, SECAM compatible) ;



LS-170 User Manual 4



23 S-Video DIN 4, used to input S-Video signal (PAL, NTSC, SECAM compatible);



24、DVI input interface. Input the video signal from computer, DVI signal generator. Connect to the same DVI interface on LS-170;

(This Connection does not support hot-plugging)



25-27、R/Pr G/Y B/Pb BNC, used to support SD/HD analog video input, up to

1080p60;



28、VGA input interface, DB-15, used to support Analog RGB input; Connect to

the VGA interface on the VSP processor.



29、AUDIO output interface2, connect to the audio player。

30、DVI output interface, connect to the monitor or LED screen which has DVI interface. (This Connection does not support hot-plugging)

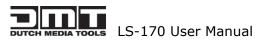


31、VGA output interface, connect to the monitor, projector and so on;

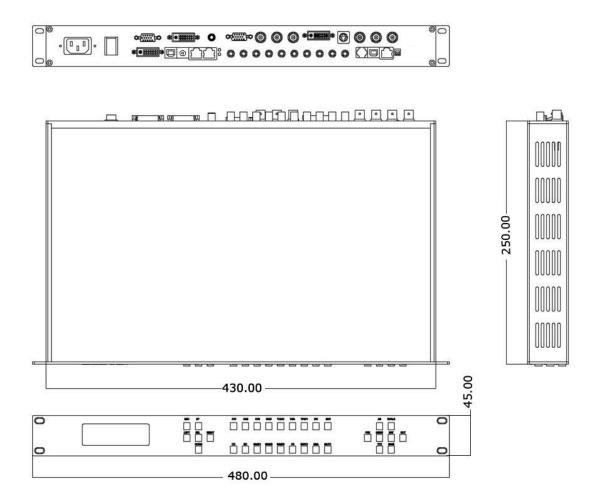


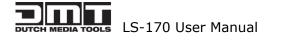
32-33、Switch and power. It must use IEC-3 power line. Always ground to avoid electric shock.

5



### 3.2 Dimensions

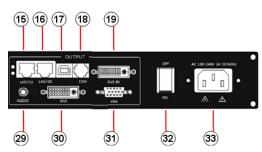




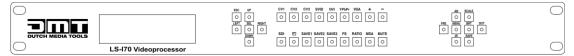
6

# 4.0 Quick Start

1. Use the included DVI-DVI cable to link **19** + **30** to.



- 2. Install the LED Studio Software.
- 3. Connect a USB cable to 17.
- 4. Start LED Studio and program the sending card. The sending card is built in 15-19.
- 5. After your LED screen has been set to work with the LED Studio Software, select the input source on the front panel of the LS-170.



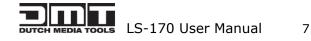
- 6. Push the scale button  $\bigcirc^{\text{SCALE}}$  to set output resolution.
- 7. This is the pixel size of your LED screen.

If you use the DMT E12.5 pixel screen, it is 32 pixels wide and 64 pixels high. A setup of 4x3 panels will have a pixel size of 4x32=128 pixels horizontally and 3x64=192 pixels vertically.

In this example you will have to set the  $\bigcirc$  scale button to 128x192.

## 4.1 Front Panel Keyboard Operation

Insert power cord and push power to ON position. LCD module on the front panel will show HIGHLITE and go into self verification before it load last setting config and send processed image to the target monitor. For the first setup, CV1 input is default source. With front panel keyboard, user can operate VSP with menu display on LCD module.



# 4.2 LS-170 series Operator Guideline

LS-170 series front panel as following:



#### 1. LCD Module;

#### 2. Keyboard:

**ESC**: push to exit from current choice item;

**SEL**: push to confirm the current choice item;

**UP**: push to select up items in LCD menu;

**DOWN**: push to select down in LCD menu;

**LEFT**: push to select the left items

**RIGHT**: push to select the right items

**CV1**: switch to composite 1 input

**CV2**: switch to composite 2 input;

**CV3**: switch to composite 3 input;

**SVID**: switch to SVideo:

**VGA:** switch to analog RGB input;

**YPbPr**: switch to high definition component,

**DVI**: Switch to DVI input

+:Switch to amplify the audio;

-: Switch to down scale the audio;



**PBP:**Switch to show two pictures in side by side mode;

**PIP**:Switch to show picture in picture on the screen. CV1 is the default small picture on the top left corner, DVI is the default picture with full screen.

**SAVE1**: switch to use the user-defined mode 1;

**SAVE2:** switch to use the user-defined mode 2;

**SAVE3**: switch to use the user-defined mode 3;

**FS**: switch to selet full screen or zoom view, just for single picture mode;

**RATIO**: switch to select aspect ratio 4: 3 or 16: 9;

LS-170 User Manual 8 **MSA**: switch to select the audio channel which send to output in multi picture mode;

MUTE: Switch to select mute sound or return;

**MENU**: push to go to main menu;

FRE:push to freeze the video image or live again; (Freeze $\rightarrow$ Live $\rightarrow$ Freeze)

**AB**: Channel Switch, only works under the PBP mode. Push it to switch between the picture of main channel and the picture of subchannel. For instance, if processor now works under subchannel mode, user can switch channels in subchannel; be under subchannel mode if you push Reset button.

**Note**:

AB in LS-170 doesn't support Fade-In-Out.

**SCALE:** push to go to between scale $\rightarrow$ zoom $\rightarrow$ crop $\rightarrow$ scale mode;

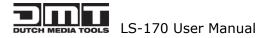
**BRT**: push to adjust the brightness and the contrast ratio, push to enter to the relevant Menu, and then push the UP and DOWN to adjust the brightness and the contrast ratio.

9

**OUT**: push to select the output format by using the UP and DOWN.

I/II: push to set single or dual channel

**SAVE**: push to save current config.



### 4.3 Video Processor Menu

System menu as follows;

>LS-170 Video Processor \*Dev Info Recall ↓

Fig. 1

The first line shows LS-170.

Push the right and left direction key to select the left or right menu. Before

the menu item, if there is a \* sign, means the menu item has been selected,

you can push the Select key to enter it.

The  $\uparrow$  on the right means you can select the menu items by pushing the up and down direction key.

User can check the information of the equipment in "Dev Info" menu

(including the manufacturer, serial-number);

User can get more service and support according to the serial-number.

DMT DUTCH MEDIA TOOLS >SN: 3204

User can check current input and output sources in Dev Info menu also.

Input: CV1 1024x768x60 Output: CV2 1024x768x60

Touch UP/DOWN to check System time

System time: 2009-08-17 15:12:35

User can do a Factory Settings in Recall menu, after successful reset you will see the menu as follows:

Factory reset was completed !

Push the MENU to enter the main menu, then push up and down direction key, the menu as follows:



>LS-170 Video	Processor		
*Language	Alpha	Ť	

Push the LEFT/RIGHT to select the relevant submenu.

LANGUAGE submenu as follows:

*LANGUAGE	
>Chinese	English

Push UP/DWON to enter Alpha setup, user can set value from 0 to 100,

0 means video or graphic would be disappear and 100 means normal;

Port A and Port B stand for two channel picture;



Push OUT to enter the Output menu, push the UP or DOWN to select different output resolution, push OK to confirm the output resolution.

Advance submenu as follows:

User can set size and position of the screen simply, Mainly applies to LED screens users. After setting screen parameter, the user choice PIP or PBP operation, display picture can directly shows on corresponding screen.



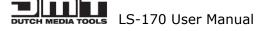
Push the I / I to enter Single or Dual channel menu , push the UP / DOWN to select the single or dual channel, push SEL to confirm the single channel or dual channel work state;

Setup Dual	
Setup Single	

Select the input channel, push the UP/DOWN, and SEL to confirm the different input channel. User can also push the channel name on the keyboard

11

to go into the input channel.



Source Select >CV1

AB in LS-170 is used to enable channel if dual channel mode.

Setup A on B

OR:

Setup A on B

Push SCALE to set the size and position of the image, push UP/DOWN and

SEL to confirm the relevant items;

Step: user can set the step of scale;

HSize: set the horizontal size of the image;

VSize: set the vertical size of the image;

HPos: set the horizontal position of the image;

VPos: set the vertical position of the image;

	Scale > Step 10
	When shown in one single image, the ratio between the horizontal and the vertical of the image should be equal to or less than 3.
<b>O</b> Note:	When shown in dual image, there is a limit of aspect ratio of the image in the left side: The horizontal of the image in the left side should be larger than that of the image in the right side. This rule still need to be followed even if the images are dragged to the opposite.

Push the FRE to freeze the live image or live the freeze image.

Freeze Frame Once gain for live

OR:

Live Frame Once gain for live

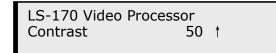
Push BRT to set the brightness and the contrast ratio:



LS-170 User Manual

LS-170 Video Processor Brightness 50 ↓

OR:



Push SAVE and then push SAVE1 or SAVE2 to save the operation to SAVE1 or

SAVE2; Push SAVE1 or SAVE2 to execute relative operation after user save

the operation sucessfully.

	Add prompt to save function
	For LS-170 series, when user push the SAVE key, the SAVE1 $\smallsetminus$
<b>Note</b> :	SAVE2 and SAVE3 lights on the front panel will go on at the same
	time, it reminds user must press SAVE1 or SAVE 2 to finish the
	final save function.

Slelect Save Mode ! Push Esc To Exit

Touch FS button can realize screen switch between scale mode and full screen mode.

Picture mode Full Size Picture mode Small Size

Touch RATIO button, set screen width and height.

Size: 4:3

Size: 16:9

Size: Normal

MSA : touch the main sub-channel audio and audio channel switching button, main channel will play sound.

13

Main window audio

Touch again, sub-channel will play sound.

Sub window audio

MUTE: mute the equipment, shown as the picture:

Mute

Touch MUTE again will revovery to play sound.



# 5.0 Communication Software Guideline

DMT video processor is very easy to be configured with user friendly communication software, support drag and drop operation for edit and display. Also can customized with schedule function.

### 5.1 Install Software

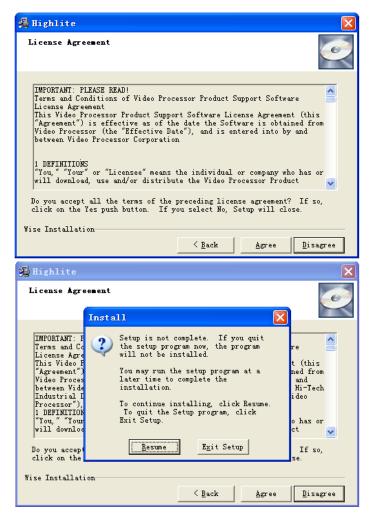
Dual click DMT.exe to install, select Chinese or English version for use, after click "select" to next dialog.

	Select Lang	1age 🛛 🔀
	Please select use during the	the language that you would like to installation.
	Intl. English Chinese (GB2312)	
	OK	Cancel
🔏 Highli	te	×
X		Welcome to Highlite Setup program. This program will install Highlite on your computer.
		It is strongly recommended that you exit all Windows programs before running this Setup Program.
3 AL		Click Cancel to quit Setup and close any programs you have running. Click Next to continue with the Setup program.
e		WARNING: This program is protected by copyright law and international treaties.
F	H	Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
		Next> Cancel

If user agree to install this software, please click next to go on, else click esc to exit this install.

And in next dialog is the user agreement of the software, click agree to go on and refuse to exit.





If users agree to the agreement, user can select install directory in next dialog,

else, click next to install software to default directory "C:\Program Files".



Click "next " to go on.



📲 Highlite			
Select Program ∎anager Group			
Enter the name of the Program Ma	nager group †	:o add Highlite ic	ons to:
Highlite			
360安全加策器 3 360安全卫士 380杀毒 Autodesk Highlite Lingoes			
Microsoft Office Skype Stardock UGS NX 4.0			~
Wise Installation			
	< Back	<u>N</u> ext >	Cancel

Click "next" to go on.

🔏 Highlite			X
Start Installation			Ó
You are now ready to install H Click the Next button to begin reenter the installation infor	the installati	ion or the Back bu	tton to
Wise Installation	< Back	Next >	Cancel
Highlite			
Instelling			
Current File Copying file: C:\Frogram Files\Highlite\AVDSI	Ø.	<u></u>	
Time Remaining O minutes 2 seco	onds		

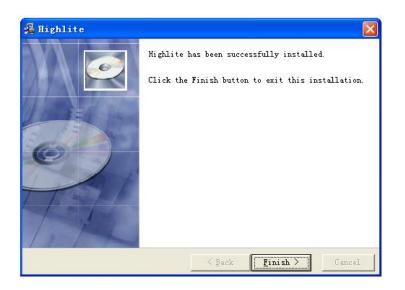
Cancel

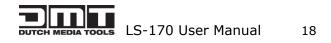
 $\underline{N}$ ext >

Click "finish" and ready to run DMT console.



Wise 安装向导





# 5.2 Run DMT Console

Run DMT.exe and the console will auto detect device in serial or networks by detected Comm port and pro-define IP address.



(Camera 1) (Camera 2) (DVD Player) (Video Server) (Video Recorder) (Broadcasting Vehicle)

After detect, open the device console, for example, if the device is LS-180, then LS-180 console will be load, as following. Default loading is LS-170 if can not detect any device.

ocessor Help					
e	Communication I	Device	Schedule Help		
🗧 🖬 🛃 🦀 🔮 🖪		8 7 5 4 8 1 9	🔯 🕨 🤋 🎹		
Itput Resolution Operating Mode	Layout Aspect R		CV1-Audi	io1	
0x600@60	Normal		0 0 0 0 0 1:CV1		
/SP Processor		Resolution		J.	
oreen Param		1000) 10			
K 0 💽 Y 0 💽 Width 800 💽 Height 6	00 💽 🚺 Set		In the second second		
nages			A REAL PROPERTY AND		
Image1					
Scale					
X 0 🜩 Y 0 🜩 Width 640 🜩 Height	480 🔿 💽 Set	17-1-7			
Display 4ode	r Gamma				
Live Video 🔻 🛛 🚃 M				IT V	
Dutput					
	ontrast 0 0 0 defaut				
	derauk				
	Ļ				
		Template: 1 2 3 4	5 6		Comm:
		Log			
					~
					_
					1700

#### **Setup Communication**

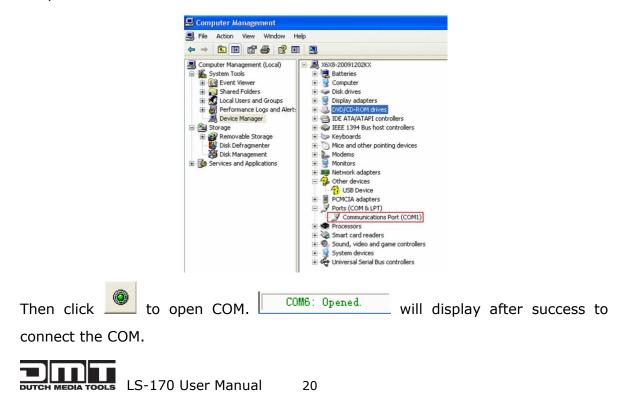
DMT Console support COM port or Ethernet (UDP) to access DMT.For the first running ,user must click the to close COM Port. Click to change the COM Port and the Baudrate.

Serial: user can make choice between existent com ports and baud rates; default Baudrate is 9600.

Ethernet: user can fill any number less than 1023 in Local Port. The Remote Port must be 192.168.0.100 and the Remote Port must be 1000.

Y Comm Setting	gs X
🔵 Serial	
CommPort	×
BaudRate	9600 💙
OEthernet	
Local Port	1000 🕞
Remote Host	192.168.0.100
Remote Port	1000 😌
	OK Cancel

The COM Port is decided by user's COM. Right click my computer icon on desktop, select Hardware $\rightarrow$ Device Manager in the system attributes dialog. The COM in red in the picture is the COM user can make choice.



If DMT console success to detect device in chain, the software version, device core version, firmware version and serial number will display on the bottom right corner of the screen.

[SV-C3.30] [CV-01.25] [FV-B2.00] [SN-08.88]

#### 5 How to use

Operator can check parameters by software.

Save script. Save current user config parameters as script.

ж	save option	A CONTRACT OF A CONTRACT	×
Ь	asic		*
	AB	✓ OperatingMode Layout	
Ir	nage1		*
	Source1	Apha1	
	Scale1		
	Zoom1		
	Crop1		
Te			
-11	nage2		\$
11	Source2	Alpha2	
-11		Alpha2	
-11	Source2	Alpha2	
-11	Source2	🗌 Alpha2	
-11	Source2 Scale2 Zoom2	🗌 Alpha2	
	Source2 Scale2 Zoom2		
Scr	Source2		

: Open script. User can open saved script.

打开				? 🗙
打	AVDSP Led-d VProcessor VSp VSP 1. vxp VSP 2. vxp	×	← E č ⊞•	
我的电脑 99 网上邻居	文件名 (0): 文件类型 (1):	VXP Script File	t _	丁开 ( <u>0</u> ) 取消



<sup>2</sup>: Import template. There are six templates for user.



<u>T</u> emplate1	(Ctrl+1)
T <u>e</u> mplate2	(Ctrl+2)
Te <u>m</u> plate3	(Ctrl+3)
Tem <u>p</u> late4	(Ctrl+4)
Temp <u>l</u> ate5	(Ctrl+5)
Templ <u>a</u> te6	(Ctrl+6)



: Export template. Export current config as template.

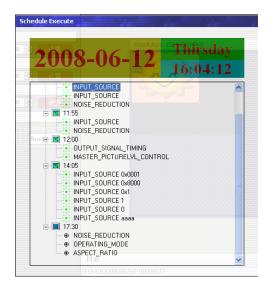
. Option. User can choose open device when start and using script saved before or execute schedule edited before when start.

If user choose open device when start, user can use last run, use script file or none

when user start. User can click to choose which script user want to open.

Start Script	
None	
🔿 Use Last Run	
OUse Script File	

If user choose execute schedule when start, the next dialogue will display when software run.



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EXAMPLE: Language. The software supports Chinese and English version. The picture following is the Chinese dialogue.

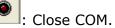




#### Communication



: Open COM.



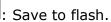
Set COM.

#### Device



Ø

: Synchronization.



FlashMode	UserMode1	•
	UserMode1 UserMode2	
Ok	UserMode3	Cancel



Load form Flash.

Load For			interna
FlashMode	UserMode1		-
	UserMode1 UserMode2 UserMode3		23
Ok		Car	ncel

Load user config from flash.



: Factory setup

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Þ

: Advance, for adm. inistrator control.

: Execute schedule or stop schedule.

#### Help

: Help. Display helps dialogue.



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**Output resolution:** user can choose different output resolution by selecting from pull down list.

Output Resolution	
1024x768@60	•
1024x768@60	~
1280x768@60	
1280x960@60	
1280x1024@60 1360x768@60	
1366x768@60	=
1365x768@60	
1600x1200@60	✓

**Operating mode:** choose to work in single channel or dual channel.

Operating Mode	
Single channel	-
Single channel Dual channel	

Layout: if in dual channel mode, user can set the device to work in PIP or PBP mode directly with quick preset layout button as following.

Layout		
	*	

**Input:** the white area display the name of input interface when the mouse is over the

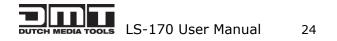
interface picture on the left. The orange pane means current selected interface.



If work in dual channel, channel 1 includes VOIP, CV1, CV2, CV3, SVideo, YCbCr, SDI 1 and SDI 2, and channel 2 includes DVI, YPbPr, VGA, HDMI1 and HDMI 2. The cross over interface picture means they can not access. The orange pane means selected interface for channel 1. The blue pane means selected interface for channel 2.



Screen parameter:



User can set size and position of the screen simply, Mainly applies to LED screens users. After setting screen parameter, the user choice PIP or PBP operation, display picture can directly shows on corresponding screen.



**Images:** User can scale the images; image 2 can't choose in single channel mode.

mages					
Image1					
Scale					
× 16	🜩 Y 49	🔿 Width 63	88 🜲 Heighl	477 🖨	Set

#### **Display Toolbar:**

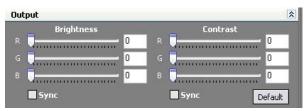
Display			
Mode Alpha -		0	Gamma
	[Gamma —		
	linear	-	
	linear	~	
	sRGB	131	
	st 1.1		
	1.2		
	1.4		
	1.5	-	
	1.6	1000	

Display toolbar Users can set Alpha value of "dynamic Video" and "static current frame" through display toolbar.

Setting Gamma is generally not recommended, since LED large screen itself has Gamma function.

For further information, users can contact with our customer service team.

**Output:** user can customize the brightness and the contrast.



**Display:** user can customize image or images position and size just by drag and drop image (images) in this area. This process is sync to the parameters in images toolbars.



Log: user can save or delete the operate log file.

Log				
2009-08-03 11:12:03:T0VC02000006e0101000070 ReadCrop_VSize 2009-08:03:11:12:03:TRVC0601016400 2009-08:03:11:12:03:T0VC2000006e0102000071 ReadCrop HPos	^	1		
2009-08-03 11:12:03 FFV/C0601023200 2009-80-33 11:12:03 FFV/C02000006e0103000072 ReadCrop_VPos 2009-80-30 11:12 03 FFV/C06010332000		:	×	

#### **Added functions**

VProcessor	About
Qutput Pa	larity
Layout	•
Alpha Del	lay Time
Device So	chedule
IPAddr	
Clock	
Audio Set	t i

#### **Output polarity**

Normally, the polarity will set to be positive.

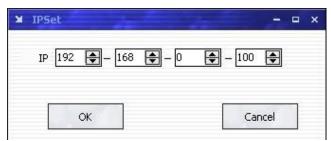
If the Horizontal and vertical polarity of LS-170 equipment is different from Tx, the polarity should be negative, or else it can not send data to the LED screen correctly.

Output Polarity	-
[Hor Sync Polarity	1
POSITIVE	
FVer Sync Polarity -	1
POSITIVE	
DCLK Polarity	1
POSITIVE	
DE Polarity	1
POSITIVE	ONEGATIVE





Users can set equipment IP, Usually used under the condition of one computer control or remote control several computers.



#### • Sound

If worked under the dual-screen mode, users can select main screen sound or sub-picture sound by clicking option box.

HDMI can transmit audio and video signals at the same time on one data line.

If users choose HDMI signal source with sound, users should choose "embedded audio";

If users choose HDMI signal source without sound, users can broadcast sound through External speaker and choose" HDMI outside embedded audio".

O Sub Audio
O Mute
Outside Audio
r

#### • Clock

Users can set or adjust lower computer time through" clock"

20 900 900 A			-		1999 AS
Year	Month	Day	Hour	Min	Sec
2009 🚖	12	1	15	11	18 🚖
114	50			12	<u>00</u> 0
	ок			Cancel	
	UN I			Cancer	



Users can set device to work with schedule, and then device can automatically switch between single or dual channel, resize image, switch video and with fade effect in need.

Equipment currently supports max 10 regular content; users can set in the "timing" option.

Specifically how to implement devising schedule function, please refer to Appendix II.

X Timing Parameters	- x
Timer Index 1 Get Set ON Date Settings	
Time Hour 15 A Minute 10 A Second 57 A Operating Mode Single channel V AB	
Image1	
Scale X 0 + Y 0 + Width 640 + Height 480 +	
Input Source	



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# 6.1 No output in target display

1) Check the output config of the input video.

2) Check the input channel config is ok. Ex.The composite 1 interface is

connected to the composite interface of video source.

3) Check the connection of output is ok.

- 4) Check the target monitor or display is not destroied or power down.
- 5) Check the output resolution of DMT is not out of the maximal resolution

of target display.

6) Check ALPHA value is not 0.

7) Any requirement, please feel free to contact our customer service engineer.

## 6.2 VGA input could not work with DMT Console

1) Check VGA source output is ok.

2)Check VGA input resolution is not out of DMT Console support list, as following. The biggest input resolution is 1024\*768\*60Hz

- 3) Check DMT Console works in VGA input mode.
- 4) Any requirement, please feel free to contact our customer service engineer.

## 6.3 DVI input could not work with DMT

- 1) Check DVI source is ok.
- 2) Check DVI source output is not out of DMT support list.
- 3) Check DMT works in DVI input mode.

4) Check the connection between DMT and DVI source is correct. Restart DVI source and check output.

5) Any requirement, please feel free to contact our customer service engineer.

### 6.4 Component input could not work with DMT

1) Check the connection between DMT and Component source is correct. Especially

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Y signal. Refer to cabling example in page 5. High Definition component YPbPr is only support in YPbPr input. Standard definition YCbCr support 480i and 576i only; High Definition YPbPr support 480i、576i、480P、576P、720P50、720P60、1080i50 and 1080i60;

2) Check component source works, normally DVD component output should be open from its menu.

3) No recommend to output component and SVideo input from the same source.

4) Any requirement, please feel free to contact our customer service engineer.

### 6.5 User settings can not save

LS-170 supports multi config mode.For multi config mode, the equipment starts to work automatically with the SAVE1 mode.According to different equipments, you can solve the problems that modes can't be saved by the following steps.

LS-170

Confirm to press the "SAVE" button, then press "SAVE1", or "SAVE2", or "SAVE3", that will save the current operation mode to the "user mode 1", "user mode 2" or "user mode 3"; After that, push button "SAVE1", ""SAVE2, "SAVE3", it will call out the corresponding set -ting of user-mode. if that, the saving is successful. Ater saving process, user should not do factory reset or any saving operation to user mode 1, otherwise, "SAVE1" will be over write.

## 6.6 Can't update main board software

Connect the computer and DMT Series, select \*.mot. Download file to device.

After the equipment power up, right-click the ".mot" file at the left side of menu, when the screen shows "waiting for update", you can update the main board program. Next, choose the "download file to device", start to loading.

# 7.0 Quick Start

# 7.1 Single-screen control

#### Set screen parameters

Users can easily change the screen size and location by setting the parameters with

keyboard and LCD menu.

Press MENU to access main menu, Menu shows as below picture:

>LS-170 Vide	eo Processor	
*Dev Info	Recall	ţ

Press UP / DOWN button to turn the menu shown as below pictures:

>LS-170 Video Proce *Advance	essor	t
Screen parameter: Hsize:	1024	

- Step: Set the unit of zoom and move every time;
- HSize: Set Horizontal size;
- VSize: Set vertical size;
- Hpos: Set horizontal coordinates(horizontal phase);
- VPos: Set vertical size(vertical phase);

#### Scale pictures

Step: Set the unit of scale and move every time;

- (Three steps available:1, 10,100)
- HSize: Set horizontal size;
- VSize: Set vertical size;
- HPos: Set horizontal coordinates(horizontal phase);
- VPos: Set vertical size(vertical phase);



#### Set alpha

Enter Alpha sub-menu can set the alpha of video, Press UP /DOWN to set the value of alpha; Port A and Port B represent two video channels;



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\*Alpha Port A Value: 100

#### Set brightness contrast

BRT brightness and contrast button can set brightness and contrast of active window video shown as below pictures:

LS-170 Video Processor Brightness 50 ↓ LS-170 Video Processor Contrast 50 ↑

BRT brightness and contrast button can set brightness and contrast of active window video shown as below pictures:

LS-170 Video Processo Brightness	r 50	Ļ
LS-170 Video Processo Contrast	r 50	t

#### Freeze Frame

Press FRE static frame button can freeze, press the button can freeze current active window image; You can make the screen switch between static and active with this button; Pictures show as below:

> Freeze Frame Once gain for live

or

Live Frame Once gain for live

7.2 How to control processor with console software by USB?

1. Install the driver;

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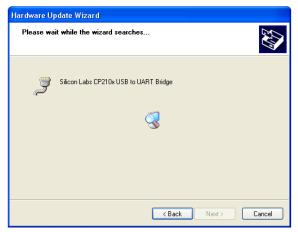
Connect the USB cable to the PC and the video processor. Turn on the LS-170, for the first time to use USB, the PC will remind finding the new hardware and ask to install the driver for this new driver.



Install from the list or specified location, press "NEXT":



Press " browser" to find the driver, and press "NEXT"

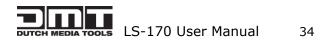






When the installation fininsh, can go to check the installed COM port inside the device mangement, as following picture show:

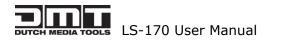
System Properties 🛛 🖓 🔀
System Restore Automatic Updates Remote General Computer Name Hardware Advanced
Device Manager The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device. Device Manager
Drivers Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers. Driver Signing Windows Update
Hardware Profiles Hardware profiles provide a way for you to set up and store different hardware configurations. Hardware Profiles
OK Cancel Apply



File Action View Help   Image: Construction of the province of the pro	🛢 Device Manager	
<ul> <li>ALXIAOLONG</li> <li>Batteries</li> <li>Bluetooth</li> <li>Computer</li> <li>Disk drives</li> <li>Display adapters</li> <li>Montors</li> <li>Montors</li> <li>Montors</li> <li>Montors</li> <li>Ports (COM &amp; LPT)</li> <li>Port (COM1)</li> <li>BT Port (COM1)</li> <li>BT Port (COM1)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM4)</li> <li>BT Port (COM4)</li></ul>	File Action View Help	
<ul> <li>ALXIAOLONG</li> <li>Batteries</li> <li>Bluetooth</li> <li>Computer</li> <li>Disk drives</li> <li>Display adapters</li> <li>Montors</li> <li>Montors</li> <li>Montors</li> <li>Montors</li> <li>Ports (COM &amp; LPT)</li> <li>Port (COM1)</li> <li>BT Port (COM1)</li> <li>BT Port (COM1)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM4)</li> <li>BT Port (COM4)</li></ul>		
<ul> <li>Batteries</li> <li>Batteries</li> <li>Bluetooth</li> <li>Disk drives</li> <li>Modems</li> <li>Modems</li> <li>Modems</li> <li>Modems</li> <li>Modems</li> <li>Modems</li> <li>Modems</li> <li>Port (COM10)</li> <li>BT Port (COM10)</li> <li>BT Port (COM11)</li> <li>BT Port (COM12)</li> <li>BT Port (COM12)</li> <li>BT Port (COM12)</li> <li>BT Port (COM13)</li> <li>BT Port (COM12)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT Port (COM1)</li> <li>BT Port (COM2)</li> <li>BT</li></ul>		
Batteries   Biteries   Biteries   Biteries   Display adapters	E- 📕 LAIXIAOLONG	
<ul> <li>Bluetooth</li> <li>Computer</li> <li>Computer</li> <li>Computer</li> <li>Display adapters</li> <li>DVD/CD-ROM drives</li> <li>DVD/CD-ROM drives</li> <li>DVD/CD-ROM drives</li> <li>DE ATA/ATAPI controllers</li> <li>DIE ATA/ATAPI controllers</li> <li>Mice and other pointing devices</li> <li>Modems</li> <li>Modems</li> <li>Mondems</li> <li>Mondems</li> <li>Mondems</li> <li>POTCIA adapters</li> <li>POTCIA adapters</li> <li>POTCIA adapters</li> <li>POTCIA datapters</li> <li>POTCIA datapters</li> <li>POTCIA datapters</li> <li>POTCIA datapters</li> <li>POTCIA (COM10)</li> <li>BT Port (COM10)</li> <li>BT Port (COM11)</li> <li>BT Port (COM13)</li> <li>BT Port (COM13)</li> <li>BT Port (COM14)</li> <li>BT Port (COM14)</li> <li>BT Port (COM13)</li> <li>BT Port (COM14)</li> <li>BT Port (COM14)</li> <li>BT Port (COM15)</li> <li>BT Port (COM16)</li> <li>BT Port (COM16)</li> <li>BT Port (COM17)</li> <li>Communications Port (COM18)</li> <li>BT Port (COM19)</li> <li>BT Port (COM19)</li> <li>BT Port (COM19)</li> <li>BT Port (COM19)</li> <li>BT Port (COM10)</li> <li>BT Port (COM10)</li> <li>BT Port (COM10)</li> <li>BT Port (COM11)</li> <li>BT Port (COM11)</li> <li>BT Port (COM12)</li> <li>BT Port (COM12)</li> <li>BT Port (COM11)</li> <li>BT Port (COM11)</li> <li>BT Port (COM12)</li> <li>BT Port (COM12)</li> <li>BT Port (COM11)</li> <li>BT Port (COM12)</li> <li>BT Port (COM12)</li> <li>BT Port (COM11)</li> <li>BT Port (COM12)</li> <li>BT Port (COM2)&lt;</li></ul>		
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Image: DVD/CD-ROM drives         Image: DVD/CD/DVD/CD-ROM drives         Im	🛨 👰 Display adapters	
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Image: Test 1394 Bus host controllers	+ 🖾 Human Interface Devices	
IEEE 1394 Bus host controllers	🗄 🚍 IDE ATA/ATAPI controllers	
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BT Port (COM22) BT Port (COM40) BT Port (COM6) Communications Port (COM1) Communications Port (COM1) Silcon Labs CP210x LISE to LIART Bridge (COM4) Response of the second	- 📝 BT Port (COM20)	
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BT Port (COM6) BT Port (COM7) Communications Port (COM1) Silicon Labs CP210x USB to UART Bridge (COM4) Silicon Lab	BT Port (COM22)	
BT Port (COM6) BT Port (COM7) Communications Port (COM1) Slicon Labs CP210x USB to UART Bridge (COM4) Sant Card readers Sant Card readers Sound, video and game controllers Sound, video and game controllers System devices	- 📝 BT Port (COM40)	
Communications Port (COM1) Silicon Labs CP210x USB to UART Bridge (COM4) Servicessors Sound, video and game controllers System devices	BT Port (COM6)	
Silicon Labs CP210x USB to UART Bridge (COM4)         Recessors         Samt card readers         Sound, video and game controllers         System devices	- 🖉 BT Port (COM7)	
	- 🖉 Communications Port (COM1)	
e 🤣 Smart card readers e 🧐 Sound, video and game controllers e - 💡 System devices		
e ♥ Sound, video and game controllers ⊕ 9 System devices		
🖅 😨 System devices		
🗄 😋 Universal Serial Bus controllers		
	🔃 🕰 Universal Serial Bus controllers	

2. Install the console software, and run after install, shows the interface of the console as following:

m DUTCH MEDIA TOOLS 2.8.4.4			3 🗙
Wrocessor Help			
File	Communication	Device Schedule Help	
🛎 🖬 🗳 😫 👪	• • •		
Output Resolution Operating Mode	Layout Aspect		- 1
800x600@60   Single channel  AB	Normal		
VSP Processor		Resolution	
Screen Param			
X 0 🗣 Y 0 🚭 Width 800 🚭 Height 60	0 🚍 Set		
Images			
Image1			
Scale			
X 0 🔄 Y 0 🔄 Width 640 🚭 Height 4	80 💽 💽 Set		
Display			
Volume	ne Gamma		
Output	ntrast		
	ntrast		
	0		
Sync Sync	default		
	deradik		
			-
		Template 1 2 3 4 5 6 Comm. 1	
		Log	
			×
		· · · · · · · · · · · · · · · · · · ·	_
		×	
COM4: Closed.	LS-170		



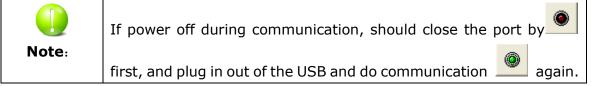
9600.

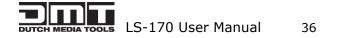
Ψ,

CommPort		~
BaudRate	9600	~
Local Port Remote Host	1000 192.168.0.100	•
Remote Host	192.168.0.100	-
Remote Port	1000	

: Set the RS232 as installed just now, and set the LS-170 Boud Rate to be:

Press to start RS 232 communication, when there is green point in the right down corner showing on the software, it means the communication is OK, and you can use the software to control the device now; the software operation is the same as LS-170, just can see the difference of the SDI input;





### 7.3 How to Use LINSN Ledset software?

- 1. First, Install DMT software and LINSN software.
- 2. Run DMT software;

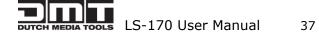
①Press to set the RS232. first choose the current RS232 you are using, then set the baud rate.

CommPort	
BaudRate	9600
Local Port	1000 8
Local Port	1000
Remote Host	192.168.0.100
	1000

Press to start the RJ232, when the green point showing on the right down corner, it means the communication is successful.

Press coption. Find the LINSN software installation file LEDSET.EXE through "external progress route" as following picture:

Open device when start	Execute s	chedule when star	ť.
Start Script			
O None			
🔿 Use Last Run			
🔿 Use Script File 📃			
Win Exec Path C:\Docum	ents and Settings	\Administrator\桌面	门常



MUTCH MEDIA TOOLS 2.8.4.4					- E X
File	Communication	Device s	hedule Help		
		and and and and seed and and	8 8 8		
Output Resolution Operating Mode	Layout Aspec	Ratio	CV1-Audio	a	
800x600@60 • Single channel • AB	1 Norma		000 or 1:01		
VSP Processor		Resolution			
Screen Paran					
X 0 C Y 0 C Widh 1024 Heght 76	8 🕃 🚺 Set		A LOW REAL	200 C	
Images					
Scale		2 LedSet	X		
X 0 🚭 Y 0 🚭 Widh 640 🚭 Heght 44	80 😨 🚺 Set	37 31			
Display		□ 大算电流 □ 大算	Ê		
Live Video Volume	fe Ganna				
Output		CR 83			
Brightness Cor	ntraxt	£61: 0	en e en eneren An		
	0	8.6T 0			
	0	<u>- 22802</u>	100		
Sync Sync	detaut	2	比许自动完成 0		
a sync	oetaut	<b>复位皇示算设置</b> 皇	昇級控   売度和色温   设置参数   運出		
		Template 1 2 3 4 5	6		Comm 🔴
		Log			
					×
					X
CORD Classed	1095165				

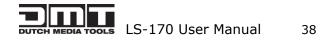
As LINSN software will use RS232 for communication too, so user should first close ź.

DMT console software RS232 communication after that press

If in used , then to start the LINSN software. When you want to use DMT

software, you just need to close LINSN software, start the RS232 again.

	Before using DMT console software to execute the LINSN software,			
Note:	you should first internally connect the device's 100M board with			
	sending card.			
	Any question, please feel free to contact our customer service			
	engineer.			



# 8.0 Appendix

# 8.1 Appendix I Download the IP software

Turn off the power, take the two coding switch to "ON" sate. As below:



Connect one side of the RJ11 download line to the RS232 on the video processor, and the other side to be connected to the serial port on the PC.





Double click  $^{\tt Flash\ Magic}$  to run Flash Magic ,setting as below:

First, users can choose the right serial port, set the baud rate to 9600, choose LPC2368, and to load the aim document (hex.document) of IP board upgrading. Secondly, confirm the two option box by tick.



Verify after programming Fill unused Flash Gen block checksums Execute

Finally, click the "Start" button.



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🎲 Flash 🔳 ag	ic - NON PRODUCTION USE ONLY					
<u>F</u> ile <u>I</u> SP <u>O</u> ptions <u>T</u> ools <u>H</u> elp						
۵ 🔍 🗔 🖻	I 🐗 🗸 🎩 🔈   🗇   🔤   😮 😂					
Step 1 - Communi	cations Step 2 - Erase					
Device:	Erase block 0 (0x000000-0x000FFF)     Erase block 1 (0x001000-0x001FFF)					
COM Port:	COM 1 Erase block 2 (0x002000-0x002FFF)					
Baud Rate:	ETASE DIOCK 4 (UX004000-0X004FFF)					
Interface:	None (ISP)					
Oscillator (MHz):	12 Erase all Flash+Code Rd Prot Erase blocks used by Hex File					
Step 3 - Hex File						
Hex File: E:\文档	当 \Backup\test_usb\uc150\uc150PRJ-base\2300_Http_de Browse					
Modified	:星期四,十月 21, 2010, 14:44: <u>more info</u>					
Step 4 - Options	Step 4 - Options Step 5 - Start					
✓ Verify after programming Set Code Read Prot Start						
Fill unused Flas	h					
Gen block cheo Execute	:ksums					
	Download free 8051 and XA code examples using I2C, CAN, Flash, etc.					
www.esacademy.u						

After download, exit the program, turn off the power, tack the two coding switch back, as below, restart the equipment power, check if the equipment work normally.

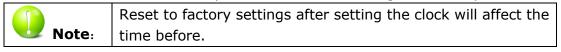


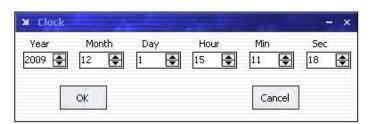


# 8.2 Appendix II How to add tasks.

Use "Device Schedule" can add tasks, make device automatically run to the Schedule input source in specified time or schedule display modes such as fade in and out.

• First of all, set lower computer current time through host computer "clock".





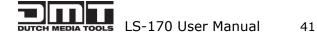
After Clock setting, users can check whether successfully set through button. Press MENU button to enter system main menu, then press Dev Info (device information), then press SEL button can show device information. Touch /DOWN, check in the System time. Shown as below picture:

> System time: 2009-08-17 15:12:35

• After device clock set, add task plan through" Timing Parameters".

	- x
Timer Index 1 Get Set ON Date Settings 2009-12- 1	
Time Hour 15 Minute 10 🖶 Second 57 🖶	
Operating Mode Single channel  AB Image1	
Scale X 0 + Y 0 + Width 640 + Height 480 +	
Input Source	٦

1. Users need to start "time-enabled" before using" timing device". If you forget to start, time set may fail.



Click "start" button , when the button changes to , it means time can start.

Press MENU button can enter system main menu, touch UP/DOWN to enter advanced menu, shown as the picture:



Press SEL button to enter advanced menu

Time: Time Able

2. When the timer count is set to 1, it indicates that the setting contents will be stored in the "timing 1". If you need to set more, you can set up one by one and

saved in differe	ent "Timer index".
	Equipment currently supports 10 task scheduler.

3. Set "task schedule" playing time, can up to second.

Date Settings			
2009-12- 1 💌			
Time			
Hour 15	Minute 33	Second 8	\$

4. Select the signal source to play works in dual channel or single channel mode, and check whether to use fade during dual channel mode.

Operating Mode	Single channel	-	AB
		1000	

5. Users can control the image position and size by change the data or click the drop-down arrow.

Image1		
Scale		
X 0 🖨 Y 0	🗣 Width <mark>640 🜩</mark> Height <mark>480 🜩</mark>	

6. When device works under the single channel mode, click the interface Icon. Red box indicates current interface has been selected as the input interface;

When device works under the dual channel mode, need to switch image 1 and

image 2 set input signal one by one. Image1 Image2

Users can see the image 1 and image 2 input source information in the input source toolbar after setting. Shown as the picture:



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Input Source		
	CV1-Audio1	
	1:CV1	2:DVI

7. When you finished above step, click button to finish adding" tasks plan".

Click button Get , you can see the input source, playing time, image size, position etc. of the current "tasks plan"

Users can see all the "tasks plan" relevant content through "Timer index" switching



