Liquid Crystal Display Television
Service Manual

Chassis: M–STAR

Product Type: LT3214S/LT2614S
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1. Product Safety Servicing Guidelines

WARNING:

Service should not be attempted by anyone unfamiliar with the necessary precaution on this receiver. The following are the necessary precaution to be observed before serving this chassis.

1. Since the power supply circuit of this receiver is directly connected to the AC power line, an Isolation transformer should be used during any dynamic service to avoid possible shock hazard.

2. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as: non-metallic control knobs, insulating cover, shields, isolation resistor-capacitor network etc.

3. When replacing parts or circuit boards, disconnect the power cord.

4. When replacing a high wattage resistor (oxide metal film resistor) on the circuit board, keep the resistor (1/2in) away from circuit board.

5. Connection wires must be kept away from components with high voltage or high temperature.

6. If any fuse in this LCD TV receiver is blown, replace it with the FUSE specified in the chassis part list.

The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the
presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the set.

Many electrical and mechanical parts in the chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection. When replacement parts are required, be sure the service technician uses replacement parts specified by us that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, injury to persons or other hazards. This LCD TV product should be situated away from heat source such as radiation, stoves, or other product that produce heat.

2. Product Function Specifications

2-1 LT3214S/LT2614S Product Function
Front Controls
Multimedia - TV receiver, Video monitor and PC display, all in one.

Wider viewing angle, 16:9 display - 176° viewing angle.

Digital display device - truthfully reproducing the images, without
distortion or blurring, irrespective of magnetic or geomagnetic effect.

- 200 channels memory
- Sleep timer
- Teletext with 252 pages memory
- Stereo
- Dual SCART interface
- Multi-language OSD

2-2 LT3214S/LT2614S Specifications
Specifications

Screen Size: 32-inch (81 cm) TFT LCD TV
Native Resolution: 1366 x 768 Pixels (corresponding to WXGA)
Colour System: PAL/SECAM
Sound System: B/G, D/K, I, L/L'
Tuner: VHF/UHF: 48.25~863.25MHz
Antenna: 75Ω VHF/UHF input
Stereo: NICAM/A2

VIDEO INPUT:
SCART-1 (Video and RGB) Video: 1 Vp-p, negative sync, 75Ω input
RGB: 0.7 Vp-p, 75Ω input
SCART-2 (Video) Video: 1 Vp-p, negative sync, 75Ω input
Audio in Stereo audio input for SCART1 and SCART2
COMPONENT RCA, 0.7 Vp-p/75Ω input
(480i/60Hz, 480P/60Hz, 576i/50Hz, 576P/50Hz, 720P/60Hz,
1080i/50Hz, 1080i/60Hz)
Audio in RCA Stereo audio input

PC INPUT:
VGA 15 Pin , Analog RGB signal, 0.7Vp-p, 75Ω input
(VGA, SVGA, XGA)
Audio in RCA Stereo audio input

MONITOR OUT
Speaker Output 8W+8W
Power Requirement AC 180 to 240V, 50/60Hz
Power Consumption 165W
Dimensions(mm) 813.2 (L) x240 (D) x642 (H)
Weight (gross) 20.2kg

Allowable temperature of operation environment
..........................................................0°C to 40°C

ACCESSORIES
Operating Instructions 1
Remote Control Unit 1
Power Lead 1
Dry Cell Battery 2

Note: Specifications and design are subject to possible modifications without notice due to improvements.

The HDMI interface (High Definition Multimedia Interface)

What is HDMI?
HDMI, is a next-generation interface that enables the transmission of digital audiovisual signals using a single cable without compression, and embedded the HDCP feature. The HDMI interface is provided for transmitting digital television audiovisual signals from DVD players, set-top boxes and other audiovisual sources to television sets, projections and other video displays. The HDMI interface is optimized for next High Definition content.

HDCP (High bandwidth Digital Content Protection system)
HDCP, is designed for protecting Audiovisual content over certain high-bandwidth interfaces, referred to as HDCP-protected interfaces, from being copied.
3. Lcd Panel Spec

3-1 General Description

LT3214S’ S Lcd Panel is a 32” TFT Liquid Crystal Display module with 16-CCFL Backlight unit and 1ch-LVDS interface. This module supports 1366 x 768 WXGA format and can display true 16.7M colors (8-bit colors).

The inverter module for backlight is built-in.
FEATURES

- High brightness (400 nits)
- Ultra-high contrast ratio (1200:1)
- Faster response time (gray to gray average 6.5ms)
- High color saturation NTSC 75%
- Ultra wide viewing angle: 176(H)/176(V) (CR>20) with Super MVA technology
- DE (Data Enable) only mode
- LVDS (Low Voltage Differential Signaling) interface
- 180 degree rotation display (option)
- Color reproduction (nature color)
LT2614S’ LCD Panel is a 26.0 inch Color TFT-LCD Module T260XW02. This LCD module has a TFT active matrix type liquid crystal panel 1366x768 pixels, and diagonal size of 26.0 inch. This module supports 1366x768 XGA-WIDE mode (Non-interlace).

Each pixel is divided into Red, Green and Blue sub-pixels or dots which are arranged in vertical stripes. Gray scale or the brightness of the sub-pixel color is determined with a 8-bit gray scale signal for each dot.

The T260XW02 has been designed to apply the 8-bit 1 channel LVDS interface method. It is intended to support displays where high brightness, wide viewing angle, high color saturation, and high color depth are very important.

### 3–2 General Features

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Unit</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Area</td>
<td>708.954 (H) x 398.592 (V) (32.02° diagonal)</td>
<td>mm</td>
<td>(1)</td>
</tr>
<tr>
<td>Bezel Opening Area</td>
<td>714.95 (H) x 404.6 (V)</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>Driver Element</td>
<td>a-si TFT active matrix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pixel Number</td>
<td>1366 x R.G.B. x 768</td>
<td>pixel</td>
<td></td>
</tr>
<tr>
<td>Pixel Pitch (Sub Pixel)</td>
<td>0.1730 (H) x 0.5190 (V)</td>
<td>mm</td>
<td></td>
</tr>
<tr>
<td>Pixel Arrangement</td>
<td>RGB vertical stripe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Colors</td>
<td>16.7M</td>
<td>color</td>
<td></td>
</tr>
<tr>
<td>Display Operation Mode</td>
<td>Transmissive mode / Normally black</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Treatment</td>
<td>Anti-Glare coating (Haze 25%), Hard coating (3H)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Block Diagram

4-1 Chassis Block Diagram
4-2 Video Processing Part
4-3 Audio Processing Part

4-4 I2C Controlling Part
5. Service Mode And Adjustment

5-1 Service Mode

Use the remote control, first open MAIN MENU with MENU button, and choose AUDIO SETTING with the CHANNEL UP/DOWN button, then choose the BALANCE with VOLUME UP/DOWN. In this condition, press 0, 5, 3, 2, you can enter factory menu.

5-1-1 Fac. Menu
### Service Mode (TV)

- **White Balance**
- **Additional Settings**
- **Options 1**
- **Options 2**
- **Audio Options**
- **Deviation settings**
- **DRX**
- **NVM Edit**
- **NVM Initialize**
- **MinMidMax Init**
- **Scaler**
- **Set channel**
- **ToFAC**

___

### White Balance (TV)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rgain</td>
<td>+126</td>
</tr>
<tr>
<td>Ggain</td>
<td>+121</td>
</tr>
<tr>
<td>Bgain</td>
<td>+115</td>
</tr>
<tr>
<td>Roffset</td>
<td>+119</td>
</tr>
<tr>
<td>Goffset</td>
<td>+122</td>
</tr>
<tr>
<td>Boffset</td>
<td>&lt;+121&gt;</td>
</tr>
<tr>
<td>WBH-Bright</td>
<td>&lt;+100&gt;</td>
</tr>
<tr>
<td>WBH-Contrast</td>
<td>&lt;+100&gt;</td>
</tr>
<tr>
<td>WBH-Satiation</td>
<td>&lt;+100&gt;</td>
</tr>
<tr>
<td>WBL-Bright</td>
<td>&lt;+80&gt;</td>
</tr>
<tr>
<td>WBL-Contrast</td>
<td>&lt;+80&gt;</td>
</tr>
<tr>
<td>WBL-Satiation</td>
<td>&lt;+80&gt;</td>
</tr>
</tbody>
</table>

___

### Additional settings (TV)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DYNFOC-Vertical(PW MV)</td>
<td>&lt;+1&gt;</td>
</tr>
<tr>
<td>DYNFOC-Norstart(DFHB)</td>
<td>&lt;+1&gt;</td>
</tr>
<tr>
<td>DYNFOC-Horstop(DFHE)</td>
<td>&lt;+1&gt;</td>
</tr>
<tr>
<td>OSD H-shift</td>
<td>&lt;+205&gt;</td>
</tr>
<tr>
<td>OSD H-shift split screen</td>
<td>&lt;+220&gt;</td>
</tr>
<tr>
<td>OSD V-shift</td>
<td>&lt;+33&gt;</td>
</tr>
<tr>
<td>OSD pixel clock</td>
<td>&lt;+72&gt;</td>
</tr>
<tr>
<td>Caption status Display</td>
<td>&lt;NO&gt;</td>
</tr>
<tr>
<td>XDS Data Display</td>
<td>&lt;NO&gt;</td>
</tr>
</tbody>
</table>

___

### Options 1 (TV)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front AV(Ext 3)</td>
<td>&lt;Yes&gt;</td>
</tr>
<tr>
<td>Front AV Y/C(Ext 4)</td>
<td>&lt;No&gt;</td>
</tr>
<tr>
<td>Front AV(Ext 5)</td>
<td>&lt;No&gt;</td>
</tr>
<tr>
<td>DVB Module</td>
<td>&lt;No&gt;</td>
</tr>
<tr>
<td>Picture Tube 16:9</td>
<td>&lt;Yes&gt;</td>
</tr>
<tr>
<td>Blue Screen</td>
<td>&lt;No&gt;</td>
</tr>
<tr>
<td>Picture Mute</td>
<td>&lt;No&gt;</td>
</tr>
<tr>
<td>UHF Only</td>
<td>&lt;No&gt;</td>
</tr>
<tr>
<td>Search For BG,DK,I</td>
<td>&lt;Yes&gt;</td>
</tr>
<tr>
<td>Search For L/L’</td>
<td>&lt;No&gt;</td>
</tr>
<tr>
<td>Search For M</td>
<td>&lt;Yes&gt;</td>
</tr>
<tr>
<td>Pref.Search Standrd</td>
<td>&lt;BG,DK,I&gt;</td>
</tr>
<tr>
<td>Station Ident</td>
<td>&lt;Yes&gt;</td>
</tr>
<tr>
<td>ATS Delay Time (ms)</td>
<td>&lt;50&gt;</td>
</tr>
</tbody>
</table>
Options 2 (TV)

JPEG Viewer <NO>
Show Versions of Ics <NO>
GTI Enable <Yes>
LTI Enable <NO>
Scaler Chip Select <6151>
Logo <hisense>

Audio Options (TV)

Equslizer <Yes>
Show Volume bar <Yes>
Auto Store Volume <No>
BBE <No>
Voice <No>
SRS WOW <No>
ACF <No>
VolumeLim <+100>
Volume 0 <-115>
Volume 1 <-60>
Volume 20 <-30>
Volume 50 <-15>
Volume 100 <-2>

Back: i Exit: ok

Deviation Settings (TV)

MJapa <+24>
BTSC <+24>
DK Dual <+24>
BG <+24>
NICAM L <+24>
NICAM I <+24>
DK NICAM <+24>
FM Radio <+24>

DRX (TV)

Standard Select <BG,DK>
Top setting <+7>
Video Peaking <0>
SIP Reference <+2>

Back: i Exit: ok
**NVM Edit (TV)**

NVM edit addr.(hex)  _ _ _ _  
NVM edit data.(hex)  _ _  
WARNING: Editing may cause defects!  
NVM data dev:000 bin:00000000  
A: B: C; D: E; F; G;  

Back: i  Exit: ok

**NVM Initialize (TV)**

Initialize NVM from Rom  
Continue: LEFT key Exit: M key

Back: i  Exit: ok

**MinMidmax Init (TV)**

Brightness 0  <-252>  
Brightness 1  <-100>  
Brightness 50  <+100>  
Brightness 100  <+252>  
Contrast 0  <0>  
Contrast 50  <+30>  
Contrast 100  <+63>  
Picture Mode_Bright_Bri <+125>  
Picture Mode_Bright_Con <+153>  
Picture Mode_Standard_Bri <+125>  
Picture Mode_Standard_Con <+145>  
Picture Mode_Soft_Bri  <+125>  
Picture Mode_Soft_Con  <+125>  
Other More

Back: i  Exit: ok

**Scaler (TV)**

ADC Rgain  <+128>  
ADC Ggain  <+128>  
ADC Bgain  <+128>  
ADC Roffset  <+128>  
ADC Goffset  <+128>  
ADC Boffset  <+128>

Back: i  Exit: ok
6. Software Updating

6-1. Updating Cable
- You can update our LCD’s software through a special I2C cable (shown below).

- This I2C cable includes a updating board, a 3.5mm Stereo Earphone plug and 3 wires.
Built the cable as shown.

6-2. LT3214S/ LT2614S Software Updating Operation
LPT Setup

The first step:

First double click the “LPTDrv” folder, you should select a LPT driving software in the folder.

The second step:

When the LPT setup is OK, Please open the system manager and select LPT1.
Updating Operation:

The first step:

First turn on the TV, then plug one end of the serial cable to the LPT port of PC and other end to I2C port of TV. and double click the file vct49xyi_start.exe in “vct49xyi” folder, A dialog will come up like sub picture.
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The second step:

click the “TVT” button on the bottom, A dialog will come up like sub picture.
The second step:

Double click the “F:\mints.bin”, A dialog will come up like sub picture.

Note:

LCD colour TV software updating setup

1. File->Preferences->LPT Preferences

   LPT: The current LPT
   Delay: 0
   Time out: 300

2. Name: The folder of Updating software

   Address: From 0x800000

   To 0x87ffff
The third step:

After clicking the “TVT” button on the bottom, A DOS interface will come up like sub picture. If the word following “… is “OK”, it shows that the communication between the LCD colour TV and computer is OK, or it needs to check the connect of I2C.
The fourth step:

1. After the DOS interface disappeared, click the “Bootloder Version” button, it ought to show “22” without red words such as “No Acknowledge from Stave”.

2. Wait for 30 seconds after clicking the “Erase 16Bit Flash” button.

3. If the red words such as “No Acknowledge from Stave” don’t appear after the updating progress, that the software updating is OK.
7. LT3214S/LT2614S Explode View And Bom
<table>
<thead>
<tr>
<th>序号</th>
<th>图号</th>
<th>名称</th>
<th>数量</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>YDT615E-13W8R-F</td>
<td>speaker</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>RSAG8.074.301</td>
<td>front</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>RSAG6.356.013</td>
<td>key</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>RSAG8.038.461</td>
<td>shielding</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>RSAG2.908.800</td>
<td>power</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>RSAG8.337.024</td>
<td>button</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>RSAG8.038.704</td>
<td>function</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>E/RSR8.808.1067</td>
<td>base</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>RSAG8.038.572</td>
<td>function</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>RSAG8.081.090</td>
<td>terminal</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>RSAG8.074.303</td>
<td>terminal</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>RSAG8.038.702</td>
<td>function</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>E/RSR8.807.2050</td>
<td>nameplate</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>RSAG2.908.685-21</td>
<td>main board</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>RSAG2.908.871</td>
<td>scart board</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>WG6.121.024</td>
<td>nameplate</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>RSAG8.038.711</td>
<td>terminal</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>RSAG6.150.142</td>
<td>mounting bracket</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>RSAG2.908.801-1</td>
<td>board</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>RSAG8.640.036</td>
<td>board</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>RSAG8.804.371</td>
<td>power board</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>LCL-07G</td>
<td>power terminal</td>
<td>1</td>
</tr>
</tbody>
</table>

**外观尺寸图**
8. Spare Parts List

Please refer to Spare Parts List.

9. Troubleshooting

<table>
<thead>
<tr>
<th>No.</th>
<th>Trouble</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Turn on the TV, The LED is red, no display on screen</td>
<td>replace the main board or updating the software. (it’s the software is wrong)</td>
</tr>
<tr>
<td>2</td>
<td>Turn on the TV, The LED is blue, but no picture or/and no sound</td>
<td>you should to replace the main board.</td>
</tr>
<tr>
<td>3</td>
<td>In TV state, can not to tuning</td>
<td>you should to replace the main board.</td>
</tr>
<tr>
<td>4</td>
<td>No teletext</td>
<td>You should to replace the main board. (the teletext IC bad)</td>
</tr>
<tr>
<td>5</td>
<td>No sound</td>
<td>You should to replace the main board.</td>
</tr>
<tr>
<td>6</td>
<td>can not to updating software</td>
<td>You should to replace the main board.</td>
</tr>
<tr>
<td>7</td>
<td>No reaction with PC</td>
<td>You should change the main board</td>
</tr>
</tbody>
</table>

10. Circuit Diagram