

Part Number: **4175500xx-3**

Model: **SVX-4096**

| DATE   | VERSION  | SUMMARY OF CHANGES  | NOTE              |
|--|----------|---|-------------------|
| 12 January 2016<br>(Revised on 17 February 2016) | 10       | <p>Release production material for production</p> <p><b>Bare PCB: 017550001-3; P/N 417550010-3</b><br/>           BIOS: U20, E0.04.00.01 (Flash F25L16PA-100PG2S)(new)<br/>           U24, V6.06.0.0 (PIC32F675F512L)(same as SVX-2560)<br/>           U33, U33_20150901.bin(SST25VF020)(web page of IP-60)(same as SVX-2560)</p>   | ECN#<br>870689544 |
| 24 March 2016                                    | 10 to 11 | <p>Release phase one firmware V1.00.00.00</p> <p><b>Panel connectivity:</b></p> <ul style="list-style-type: none"> <li>- V-by-One panel (8-lane)</li> <li>- V-by-One panel (16-lane), with IE-2000</li> <li>- LVDS panel (8-channel)</li> <li>- eDP panel (8-lane with max speed HBR/4-lane with max speed HBR2)</li> </ul> <p><b>Input:</b></p> <ul style="list-style-type: none"> <li>- HDMI (2.0), up to <a href="#">4096x2160@60Hz</a></li> <li>- HDMI (1.4) , up to <a href="#">4096x2160@30Hz</a></li> <li>- Display Port (1.2), up to <a href="#">4096x2160@60Hz</a></li> <li>- Dual-link DVI, up to 4096x2160@30Hz</li> </ul> <p><b>Output resolution:</b> 3840x2160, 1920x1200, 1920x1080</p> <p><b>Key Features Support:</b></p> <ul style="list-style-type: none"> <li>- Support V-By-One, eDP or LVDS panel interface on single firmware.</li> <li>- Support Multi-panel timings selection by DIP SW settings.</li> <li>- Support PIP (Picture in picture) and PBP (Picture by picture, up to max. 4 pictures)</li> <li>- Support RS-232 commands controls</li> <li>- Onboard LAN port support commands control in local network. (IP-60's direct/browse mode)</li> <li>- Onboard LED backlight driver.</li> <li>- Onboard temperature sensor.</li> <li>- Support external sensors monitoring.</li> <li>- Backlight control: D/A and PWM.</li> <li>- Audio line out header for the connection to external audio amplifier.</li> <li>- Input power of DC12V/DC 24V.</li> <li>- Supports 3.3V/5V/12V and 18V panels</li> <li>- Support DV IR remote handset.</li> </ul> <p><b>Bare PCB: 017550001-3; P/N 417550011-3</b><br/>           BIOS: U20, V1.00.00.00 (Flash F25L16PA-100PG2S)(new)<br/>           U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>           U33, U33_20160307.bin(SST25VF020)(web page of IP-60)(changed)<br/>           U41, DDC checksum(D9)(no change)<br/>           U31,37, DDC checksum(D9,13)(changed)<br/>           U34, DDC checksum(64,82)(no change)<br/>           U19, DDC checksum(76,22)(changed)</p> | ECN#<br>870689563 |

| 6 July 2016 | 11 to 12                          | <p>Release phase two firmware V1.04.00.00</p> <ol style="list-style-type: none"> <li>1. Auto source seek <ul style="list-style-type: none"> <li>- When there is no video input source, controller will go to next available input source and display Searching with input port under search in OSD</li> <li>- Auto source seek can be enabled/disabled in Advance menu -&gt; Auto source seek</li> </ul> </li> <li>2. VGA port <ul style="list-style-type: none"> <li>- VGA port is available as A0: VGA</li> <li>- VGA setup menu is available. It's sub menu include: <ul style="list-style-type: none"> <li>- Auto Adjust: Auto adjust H position, V Position, Clock &amp; Phase</li> <li>- H Position, V Position, Clock, Phase,</li> <li>- Color Gain (Set/Reset): adjust VGA ADC color gain.</li> </ul> </li> </ul> </li> <li>3. Hot Key (under advance menu) <ul style="list-style-type: none"> <li>- Hot key 1 (+/-) and Hot key 2 (Up/Down)</li> <li>- Hot key items: source input, backlight, brightness, contrast, sharpness, hue, saturation, aspect ratio, display mode, input swap, PIP size, auto adjust (VGA), volume, no function</li> </ul> </li> <li>4. Backlight OSD menu (under advance menu) <ul style="list-style-type: none"> <li>- Invert: On &amp; Off backlight invert</li> <li>- D/A &amp; PWM: When D/A is enabled, it will set PWM frequency to 160Hz, which seems the best frequency to work in PWM to D/A on-board circuit operation</li> <li>- Frequency: Adjust PWM freq from 100Hz to 440Hz in 20Hz/step</li> <li>- Min backlight level: Range between 0~50% in 2%/step</li> </ul> </li> <li>5. Power Save menu (under advance menu) <ul style="list-style-type: none"> <li>- Turn On/Off auto power save feature of controller board when there is no signal input</li> </ul> </li> <li>6. Advanced RS-232 commands</li> <li>7. SPDIF audio: Default enable on the board</li> <li>8. Gamma OFF item is removed</li> <li>9. Remove Color format (RGB/YUV) menu under color menu</li> <li>10. Remove unused menu under color menu. Now color menu has following submenu: Gamma, Temperature, Color Effect, Hue, Saturation</li> <li>11. When OSD menu is in configuration level submenu (like setting backlight), it shows "Press SEL. DN key to confirm and save change"</li> <li>12. Show firmware version on lower left corner of the OSD menu</li> <li>13. Factory menu is kept. Under factory menu, it contains Backlight setup and Vby1 setup items</li> <li>14. When new firmware is downloaded, it performs load all default.</li> <li>15. Add 3840x2160@30Hz EDID table in DP.</li> <li>16. The hot key 1 and 2 icons are changed such that hot key 1 icon only has + and - while hot key 2 icon only has up and down.</li> <li>17. The hot key input source is changed such that <input type="checkbox"/> <ul style="list-style-type: none"> <li>- No input source menu is shown <input type="checkbox"/></li> <li>- Once key is pressed, channel is changed and the OSD box "Searching" with next input port name is shown <input type="checkbox"/></li> <li>- + and UP: Go to next input; - and DOWN: Go to previous input</li> </ul> </li> <li>18. Remove stand along icon under audio menu as it has no function</li> <li>19. Implemented RS-232 0xee 0x62 OSD switch mount lock command. All SVX-4096 features available RS-232 commands are implemented.</li> <li>20. Add Dip switch SW4 definition <table border="1" data-bbox="516 1587 1271 1864"> <thead> <tr> <th>Pos. #</th> <th>Function</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>LVDS data mapping</td> <td>OFF: VESA<br/>ON: JEIDA</td> </tr> <tr> <td>2</td> <td rowspan="2">Panel display division</td> <td>00: 1 division</td> </tr> <tr> <td>3</td> <td>01: 2 divisions<br/>10: 4 divisions<br/>11: 8 divisions</td> </tr> <tr> <td>4</td> <td>Output display bit mode selection</td> <td>OFF: 10-bit<br/>ON: 8-bit</td> </tr> <tr> <td>5</td> <td>Reserved</td> <td></td> </tr> </tbody> </table> </li> </ol> | Pos. # | Function | Description | 1 | LVDS data mapping | OFF: VESA<br>ON: JEIDA | 2 | Panel display division | 00: 1 division | 3 | 01: 2 divisions<br>10: 4 divisions<br>11: 8 divisions | 4 | Output display bit mode selection | OFF: 10-bit<br>ON: 8-bit | 5 | Reserved |  | ECN#<br>870689593 |
|-------------|-----------------------------------|---|--------|----------|-------------|---|-------------------|------------------------|---|------------------------|----------------|---|---|---|-----------------------------------|--------------------------|---|----------|--|-------------------|
| Pos. #      | Function                          | Description   |        |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |                   |
| 1           | LVDS data mapping                 | OFF: VESA<br>ON: JEIDA  |        |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |                   |
| 2           | Panel display division            | 00: 1 division  |        |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |                   |
| 3           |                                   | 01: 2 divisions<br>10: 4 divisions<br>11: 8 divisions   |        |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |                   |
| 4           | Output display bit mode selection | OFF: 10-bit<br>ON: 8-bit  |        |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |                   |
| 5           | Reserved                          |   |        |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |                   |

|                 |          |   |                |          |  |  |
|-----------------|----------|---|----------------|----------|--|--|
|                 |          | <table border="1" data-bbox="516 260 1273 369"> <tr> <td data-bbox="516 260 607 369">6</td> <td data-bbox="607 260 915 369">Reserved</td> <td data-bbox="915 260 1273 369">OFF: Vx1 I/O settings by JC1[16:1] and JC2[4:1]<br/>ON: Vx1 I/O settings by OSD<br/>Jumper : Close (H), Open (L)</td> </tr> </table> <p>21. Move Backlight setup menu under factory menu<br/>                 22. Add Vx1 setup menu under factory menu<br/>                 23. Add Vx1 pin 15 ~ pin 24 adjust menu to set to either HIGH or LOW state<br/>                 24. When MENU key is pressed for 3 seconds while power up, SVX-4096 will load all default including reset Vx1 output pin to low state.<br/>                 25. Change backlight min level default value from 0 to 5%<br/>                 26. To solve Innolux V500DK2-KS1 startup screen corruption issue found by customer, the startup time before turning on backlight is increased.<br/>                 27. Solved the firmware version no. string corruption issue when the string "Press SEL DN. key to confirm change" is displayed.<br/>                 28. Add RS-232 command 0xee 0x72 Vx1 pin state setting to set Vx1 pin 15 - pin 24.<br/>                 29. When MENU key is pressed for 3 seconds while power up, SVX-4096 will load all default including reset Vx1 output pin to low state.<br/>                 30. It is requested to disable startup Logo display by default<br/>                 31. In OSD timeout menu, if timeout is set as 10, we display "On" instead of 10 to indicate that OSD is always ON<br/>                 32. Implement color temperature 3200K<br/>                 33. Set default contrast value to higher one (but display value keep 50) to achieve max brightness in default setting<br/>                 34. One Panel timing can be downloaded to EEPROM through RS-232 interface. It is selected by setting SW3 to all ON<br/>                 35. Rundown counter support.</p> <p><b>Bare PCB: 017550001-3; P/N 417550012-3</b><br/>                 BIOS: U20, V1.04.00.00 (Flash F25L16PA-100PG2S)(changed)<br/>                 U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>                 U33, U33_20160307.bin(SST25VF020)(web page of IP-60)(no change)<br/>                 U41, DDC checksum(D9)(no change)<br/>                 U31,37, DDC checksum(D9,13)(no change)<br/>                 U34, DDC checksum(64,82)(no change)<br/>                 U19, DDC checksum(76,22)(no change)</p> | 6              | Reserved | OFF: Vx1 I/O settings by JC1[16:1] and JC2[4:1]<br>ON: Vx1 I/O settings by OSD<br>Jumper : Close (H), Open (L) |  |
| 6               | Reserved | OFF: Vx1 I/O settings by JC1[16:1] and JC2[4:1]<br>ON: Vx1 I/O settings by OSD<br>Jumper : Close (H), Open (L)  |                |          |  |  |
| 10 January 2017 | 12 to 13 | Firmware change V1.05.00..00<br>Change details please refer to 417550021-3<br><br><p><b>Bare PCB: 0175500</b></p> <p><b>01-3; P/N 417550013-3</b><br/>                 BIOS: U20, V1.05.00.00 (Flash F25L16PA-100PG2S)(changed)<br/>                 U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>                 U33, U33_20170105.bin(SST25VF020)(web page of IP-60)(changed)<br/>                 U41, VGA/DVI DDC (checksum AD,8E)(changed)<br/>                 U31,37, HDMI(P2/P3) (checksum AD,DE) DDC(changed)<br/>                 U34, HDMI(P4) DDC (checksum 7E,46) (changed)<br/>                 U19, DP DDC (checksum 91,70) (changed)</p>   | ECN# 870689625 |          |  |  |
| Jan 20, 2017    | 13 to 14 | Release firmware <b>V1.06.00.00</b> which included above non-released versions<br>- Fix the IE-2000 LVDS 4-ch panel timing<br>- Change the OSD menu word from "Advance" to "Advanced".<br><br><p><b>Bare PCB: 017550001-3; P/N 417550014-3</b><br/>                 BIOS: U20, V1.06.00.00 (Flash F25L16PA-100PG2S)(changed)<br/>                 U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>                 U33, U33_20170105.bin(SST25VF020)(web page of IP-60)(no change)<br/>                 U41, VGA/DVI DDC (checksum AD,8E)(no change)<br/>                 U31,37, HDMI(P2/P3) (checksum AD,DE) DDC(no change)<br/>                 U34, HDMI(P4) DDC (checksum 7E,46) (no change)<br/>                 U19, DP DDC (checksum 91,70) (no change)</p>  | ECN# 870689626 |          |  |  |

| <p>30 June 2016</p> | <p>1x to 20</p>                   | <p>Release phase two firmware V1.04.00.00 included above non-released versions</p> <ol style="list-style-type: none"> <li>1. Auto source seek             <ul style="list-style-type: none"> <li>- When there is no video input source, controller will go to next available input source and display Searching with input port under search in OSD</li> <li>- Auto source seek can be enabled/disabled in Advance menu -&gt; Auto source seek</li> </ul> </li> <li>2. VGA port             <ul style="list-style-type: none"> <li>- VGA port is available as A0: VGA</li> <li>- VGA setup menu is available. It's sub menu include:                 <ul style="list-style-type: none"> <li>- Auto Adjust: Auto adjust H position, V Position, Clock &amp; Phase</li> <li>- H Position, V Position, Clock, Phase,</li> <li>- Color Gain (Set/Reset): adjust VGA ADC color gain.</li> </ul> </li> </ul> </li> <li>3. Hot Key (under advance menu)             <ul style="list-style-type: none"> <li>- Hot key 1 (+/-) and Hot key 2 (Up/Down)</li> <li>- Hot key items: source input, backlight, brightness, contrast, sharpness, hue, saturation, aspect ratio, display mode, input swap, PIP size, auto adjust (VGA), volume, no function</li> </ul> </li> <li>4. Backlight OSD menu (under advance menu)             <ul style="list-style-type: none"> <li>- Invert: On &amp; Off backlight invert</li> <li>- D/A &amp; PWM: When D/A is enabled, it will set PWM frequency to 160Hz, which seems the best frequency to work in PWM to D/A on-board circuit operation</li> <li>- Frequency: Adjust PWM freq from 100Hz to 440Hz in 20Hz/step</li> <li>- Min backlight level: Range between 0~50% in 2%/step</li> </ul> </li> <li>5. Power Save menu (under advance menu)             <ul style="list-style-type: none"> <li>- Turn On/Off auto power save feature of controller board when there is no signal input</li> </ul> </li> <li>6. Advanced RS-232 commands</li> <li>7. SPDIF audio: Default enable on the board</li> <li>8. Gamma OFF item is removed</li> <li>9. Remove Color format (RGB/YUV) menu under color menu</li> <li>10. Remove unused menu under color menu. Now color menu has following submenu: Gamma, Temperature, Color Effect, Hue, Saturation</li> <li>11. When OSD menu is in configuration level submenu (like setting backlight), it shows "Press SEL. DN key to confirm and save change"</li> <li>12. Show firmware version on lower left corner of the OSD menu</li> <li>13. Factory menu is kept. Under factory menu, it contains Backlight setup and Vby1 setup items</li> <li>14. When new firmware is downloaded, it performs load all default.</li> <li>15. Add 3840x2160@30Hz EDID table in DP.</li> <li>16. The hot key 1 and 2 icons are changed such that hot key 1 icon only has + and - while hot key 2 icon only has up and down.</li> <li>17. The hot key input source is changed such that <input type="checkbox"/> <ul style="list-style-type: none"> <li>- No input source menu is shown <input type="checkbox"/></li> <li>- Once key is pressed, channel is changed and the OSD box "Searching" with next input port name is shown <input type="checkbox"/></li> <li>- + and UP: Go to next input; - and DOWN: Go to previous input</li> </ul> </li> <li>18. Remove stand along icon under audio menu as it has no function</li> <li>19. Implemented RS-232 0xee 0x62 OSD switch mount lock command. All SVX-4096 features available RS-232 commands are implemented.</li> </ol> | <p>ECN#<br/>870689591</p> |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |
|---------------------|-----------------------------------|--|---------------------------|----------|-------------|---|-------------------|------------------------|---|------------------------|----------------|---|---|---|-----------------------------------|--------------------------|---|----------|--|---|----------|--|--|
|                     |                                   | <p>20. Add Dip switch SW4 definition</p> <table border="1" data-bbox="516 1564 1271 1944"> <thead> <tr> <th>Pos. #</th> <th>Function</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>LVDS data mapping</td> <td>OFF: VESA<br/>ON: JEIDA</td> </tr> <tr> <td>2</td> <td rowspan="2">Panel display division</td> <td>00: 1 division</td> </tr> <tr> <td>3</td> <td>01: 2 divisions<br/>10: 4 divisions<br/>11: 8 divisions</td> </tr> <tr> <td>4</td> <td>Output display bit mode selection</td> <td>OFF: 10-bit<br/>ON: 8-bit</td> </tr> <tr> <td>5</td> <td>Reserved</td> <td></td> </tr> <tr> <td>6</td> <td>Reserved</td> <td>OFF: Vx1 I/O settings by JC1[16:1] and JC2[4:1]<br/>ON: Vx1 I/O settings by OSD<br/>Jumper : Close (H), Open (L)</td> </tr> </tbody> </table>   | Pos. #                    | Function | Description | 1 | LVDS data mapping | OFF: VESA<br>ON: JEIDA | 2 | Panel display division | 00: 1 division | 3 | 01: 2 divisions<br>10: 4 divisions<br>11: 8 divisions | 4 | Output display bit mode selection | OFF: 10-bit<br>ON: 8-bit | 5 | Reserved |  | 6 | Reserved | OFF: Vx1 I/O settings by JC1[16:1] and JC2[4:1]<br>ON: Vx1 I/O settings by OSD<br>Jumper : Close (H), Open (L) |  |
| Pos. #              | Function                          | Description  |                           |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |
| 1                   | LVDS data mapping                 | OFF: VESA<br>ON: JEIDA   |                           |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |
| 2                   | Panel display division            | 00: 1 division   |                           |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |
| 3                   |                                   | 01: 2 divisions<br>10: 4 divisions<br>11: 8 divisions  |                           |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |
| 4                   | Output display bit mode selection | OFF: 10-bit<br>ON: 8-bit   |                           |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |
| 5                   | Reserved                          |  |                           |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |
| 6                   | Reserved                          | OFF: Vx1 I/O settings by JC1[16:1] and JC2[4:1]<br>ON: Vx1 I/O settings by OSD<br>Jumper : Close (H), Open (L)   |                           |          |             |   |                   |                        |   |                        |                |   |   |   |                                   |                          |   |          |  |   |          |  |  |

|                     |                 |  |                           |
|---------------------|-----------------|--|---------------------------|
|                     |                 | <p>21. Move Backlight setup menu under factory menu<br/>                 22. Add Vx1 setup menu under factory menu<br/>                 23. Add Vx1 pin 15 ~ pin 24 adjust menu to set to either HIGH or LOW state<br/>                 24. When MENU key is pressed for 3 seconds while power up, SVX-4096 will load all default including reset Vx1 output pin to low state.<br/>                 25. Change backlight min level default value from 0 to 5%<br/>                 26. To solve Innolux V500DK2-KS1 startup screen corruption issue found by customer, the startup time before turning on backlight is increased.<br/>                 27. Solved the firmware version no. string corruption issue when the string "Press SEL DN. key to confirm change" is displayed.<br/>                 28. Add RS-232 command 0xee 0x72 Vx1 pin state setting to set Vx1 pin 15 - pin 24.<br/>                 29. When MENU key is pressed for 3 seconds while power up, SVX-4096 will load all default including reset Vx1 output pin to low state.<br/>                 30. It is requested to disable startup Logo display by default<br/>                 31. In OSD timeout menu, if timeout is set as 10, we display "On" instead of 10 to indicate that OSD is always ON<br/>                 32. Implement color temperature 3200K<br/>                 33. Set default contrast value to higher one (but display value keep 50) to achieve max brightness in default setting<br/>                 34. One Panel timing can be downloaded to EEPROM through RS-232 interface. It is selected by setting SW3 to all ON<br/>                 35. Rundown counter support.</p> <p>Hardware changes:<br/>                 1. Add 10V panel selection support on JA3<br/>                 2. Add LED backlight driver current selection by JB8 (90mA, 100mA, 120mA and 150mA)<br/>                 3. Add JP1 to force flash programming mode for development use.<br/>                 4. Not install CN4.</p> <p><b>Bare PCB: 017550002-3; P/N 417550020-3</b><br/>                 BIOS: U20, V1.04.00.00 (Flash F25L16PA-100PG2S)(changed)<br/>                 U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>                 U33, U33_20160307.bin(SST25VF020)(web page of IP-60)(no change)<br/>                 U41, DDC checksum(D9)(no change)<br/>                 U31,37, DDC checksum(D9,13)(no change)<br/>                 U34, DDC checksum(64,82)(no change)<br/>                 U19, DDC checksum(76,22)(no change)</p> |                           |
| <p>Jan 10, 2017</p> | <p>20 to 21</p> | <p>Release firmware <b>V1.05.00.00</b> which included above non-released versions</p> <ul style="list-style-type: none"> <li>- Add color temperature 3200K in OSD menu and RS-232 command.</li> <li>- Change EDID table to solve the inconsistency between panel timing and Display range limit.</li> <li>- Add OSD EDID setup menu under factory menu.<br/>(When user press the Reset icon under EDID setup menu, the default EDIDs in firmware will be downloaded to EDID EEPROMs for all HDMI ports and DVI port.)</li> <li>- In audio source selection, the default is changed to use digital source (HDMI, DP) instead of analog line in.</li> <li>- Add color temperature 3200K in OSD menu and RS-232 command.</li> <li>- After restore to default, the following states are kept without change, instead of restore to default value: (i)IP-60, (ii) RS-232 mode and (iii) Input ports of all video windows 1-4. (iv)The backlight status (including: backlight level, backlight PWM freq, backlight invert, backlight pwm/da, backlight min.)</li> <li>- Saving the changed of Sharpness value to all ports. (all ports are saved with same values), instead of individual port.</li> <li>- Add default power function with OSD menu and RS-232 command 0xee 0x6b 0x50.<br/>Default power state is not changed even after load factory default.</li> <li>- Pressing MENU key for 3 seconds to change between normal mode and standby mode. In standby mode, LED1A is red.</li> <li>- Load all default settings is now triggered by pressing SEL DN. key for 3 seconds when the board is power up. When load all default started, LED1A both red and green LEDs are turned on.</li> <li>- IP60 OSD menu page is changed to communication with selection of either enabling RS-232 or network (IP-60)</li> </ul>  | <p>ECN#<br/>870689625</p> |

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|  | <ul style="list-style-type: none"> <li>- Decrease startup time from standby to normal mode</li> <li>- Add AUO M270DAN02.3 2560x1440 8-ch 120Hz LVDS panel parameters</li> <li>- In power off state, only power key will be processed in IR remote control</li> <li>- When power on, display Power On OSD message so that user knows that the controller has responded to user power on input.</li> <li>- Add AUO M270DAN02.3 2560x1440 8-ch 120Hz LVDS panel with preferred EDID timing</li> <li>- Fix the bug that VGA clock change larger than 16 steps, and then cancel, the screen is black</li> <li>- Implemented preferred EDID timing according to DIP switch SW3 setting</li> <li>- DP EDID is changed: Add 3840x2160@60Hz, 3840x2160@30Hz, 1080p@60Hz at ext detailed timing descriptor</li> <li>- DVI EDID is changed: increased from 128 bytes to 256 bytes by adding 3840x2160@30Hz and 1080p@60Hz at ext detailed timing descriptor</li> <li>- HDMI1.4 EDID is changed: Add 3840x2160@30Hz and 1080p@60Hz at ext detailed timing descriptor</li> <li>- HDMI2.0 EDID is changed: Change vendor specific block max TDMS freq from 0x38(305MHz) to 0x78 (600MHz) for HDMI2.0 max clock rate, followed setting of SAC40 sample EDID. Add 3840x2160@30Hz at ext detailed timing descriptor 2 position. 1080p@60Hz is moved to 3 position</li> <li>- In RS-232 0x80 0x50 command to select audio source</li> <li>- Reset value is changed from analog to digital 1-2</li> <li>- If user select audio digital region which is VGA or DVI source, it will be changed to use analog audio as source</li> <li>- Fix the issue that in PIP mode, when changing main picture aspect ratio, there is no response.</li> <li>- Fix the issue that pressing MUTE key will display OSD menu</li> <li>- When IR volume up/down key is pressed, OSD volume menu is displayed</li> <li>- In audio selection OSD menu, If the digital regions source is VGA or DVI, it becomes gray and cannot be chosen. It is because VGA or DVI does not contain digital audio. If the select audio source channel is actually VGA or DVI, it is switched to analog audio source.</li> <li>- Fix incorrect no. if red dot in OSD menu             <ul style="list-style-type: none"> <li>- Advance menu has 8 items. (go up to default power)</li> <li>- Display function:2P PIP: 7 items</li> </ul> </li> <li>- Fix the issue that when OSD menu shows the info page in 4P mode, the firmware version no. is corrupted.</li> <li>- Fix the issue that when power on, the OSD message of video info, especially in 4P mode, is corrupted.</li> <li>- Implement AUO M320QAN01.0 3840x2160 eDP1.1 panel parameters</li> <li>- RS-232 commands : Audio command: 0x80 'P',             <ul style="list-style-type: none"> <li>- Digital region 2 is selectable only when it's 2P or 4P</li> <li>- Digital region 3 &amp; 4 are selectable only when it's 4P</li> </ul> </li> <li>- Fix the bug that when new firmware is upgraded, PIP and 4P windows are all VGA in default. Now after downloading new firmware, all input port are reset to D0 to D3 for P1 to P4 respectively.</li> <li>- Add user EDID RS-232 download: RS-232 User EDID command 0xee 0x76             <ul style="list-style-type: none"> <li>- "S"/"s" to download 1st 128-byte EDID</li> <li>- "E"/"e" to download 2nd 128-byte EDID</li> <li>- "R"/"r" to reset and disable 256-byte user EDID</li> </ul> </li> <li>- Support custom panel timing download through Controller Utility</li> <li>- When input source is interlaced, the display vertical frequency is shown as frame rate instead of field rate (which is twice the frame rate) in information box.</li> </ul> <p>IP-60 web page updated</p> <ol style="list-style-type: none"> <li>1. Add indicating alert function in each sensor when touches the trigger level in Monitor status Page e.g. Internal Temp Min Value set 30, if detected Internal Temp is over 30, the internal temp text field will be highlighted in Red Colo</li> <li>2. Added Color Temp. User Item (R,G,B)</li> <li>3. Added Color Effect User</li> <li>4. Fixed VGA Port Selection</li> </ol> |  |
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|              |                         | <p>5. Fixed the wrong name expression (DisplayPortHDMI 1)<br/>         6. Remove Email Alert Page<br/>         7. Change HK and Europe Office Address<br/>         8. Change Int. Temp Min. Value to Int. Temp. Warning Value<br/>         9. Change Ext. Temp Min. Value to Ext. Temp. Warning Value</p> <p><b>Bare PCB: 017550002-3; P/N 417550021-3</b><br/>         BIOS: U20, V1.05.00.00 (Flash F25L16PA-100PG2S)(changed)<br/>         U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>         U33, U33_20170105.bin(SST25VF020)(web page of IP-60)(changed)<br/>         U41, VGA/DVI DDC (checksum AD,8E)(changed)<br/>         U31,37, HDMI(P2/P3) (checksum AD,DE) DDC(changed)<br/>         U34, HDMI(P4) DDC (checksum 7E,46) (changed)<br/>         U19, DP DDC (checksum 91,70) (changed)</p> |                   |
| Jan 20, 2017 | 21 to 22                | <p>Release firmware <b>V1.06.00.00</b> which included above non-released versions<br/>         - Fix the IE-2000 LVDS 4-ch panel timing<br/>         - Change the OSD menu word from "Advance" to "Advanced".</p> <p><b>Bare PCB: 017550002-3; P/N 417550022-3</b><br/>         BIOS: U20, V1.06.00.00 (Flash F25L16PA-100PG2S)(changed)<br/>         U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>         U33, U33_20170105.bin(SST25VF020)(web page of IP-60)(no change)<br/>         U41, VGA/DVI DDC (checksum AD,8E)(no change)<br/>         U31,37, HDMI(P2/P3) (checksum AD,DE) DDC(no change)<br/>         U34, HDMI(P4) DDC (checksum 7E,46) (no change)<br/>         U19, DP DDC (checksum 91,70) (no change)</p>   | ECN#<br>870689626 |
| June 7, 2017 | 22 to 22<br>(unchanged) | <p>To improve the transient response of panel power output<br/>         - C27 changed from 1000pF to 33nF/25V/0603<br/>         Firmware no change</p> <p><b>Bare PCB: 017550002-3; P/N 417550022-3</b><br/>         BIOS: U20, V1.06.00.00 (Flash F25L16PA-100PG2S)(no change)<br/>         U24, V6.06.0.0 (PIC32F675F512L)(no change)<br/>         U33, U33_20170105.bin(SST25VF020)(web page of IP-60)(no change)<br/>         U41, VGA/DVI DDC (checksum AD,8E)(no change)<br/>         U31,37, HDMI(P2/P3) (checksum AD,DE) DDC(no change)<br/>         U34, HDMI(P4) DDC (checksum 7E,46) (no change)<br/>         U19, DP DDC (checksum 91,70) (no change)</p>  | ECN#<br>870689651 |

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| <p>June 28, 2018</p> | <p>22 to 23</p> | <p>Production release latest version SVX-4096 to TriView</p> <p><b>Scalar firmware change to V1.07.00.00:</b></p> <ol style="list-style-type: none"> <li>1. Add panel timings             <ol style="list-style-type: none"> <li>a. <i>LG LM300WQ6-SLA1</i></li> <li>b. <i>NLT NL192108ACI3-02D</i></li> <li>c. <i>LG LA1340UW1-SSA3</i></li> <li>d. <i>LG LM238WR3-SSB1</i></li> </ol> </li> <li>2. Add Video lock option on SW4-5</li> <li>3. Add RS-232 commands 0x98 0x2B/0x2D, 0x92 'R' command</li> <li>4. Increase color temp range from 2300K-9300K</li> <li>5. Improve audio level on CN13</li> <li>6. Change IR key detecting mechanism. Continuously pressing for POWER, OSD Next/Back, PIP.</li> <li>7. Change internal default value for Brightness and Contrast. Improve better gray scale.</li> <li>8. Check firmware checksum to determine whether update EDID.</li> </ol> <p><b>IP-60 changes:</b><br/> <b>Bootloader change to V2.0, firmware on U24 changed to V6.11.0.0</b><br/> <b>Web page on U33 changed to D20180514.bin</b></p> <ol style="list-style-type: none"> <li>1. New boot loader (V2.0) is used. Upgrade IP-60 without opening chassis.</li> <li>2. Added sensor query command for network (TCP)</li> <li>3. Added DHCP/Mac address/IP address query command</li> <li>4. Added command to enable boot loader (enable firmware upgrade mode)</li> </ol> <p><b>Hardware change</b><br/>         - running change to use EON, EN25QH16A-104GIP on U20 as the old part F25L16PA is EOL.</p> <p><b>Bare PCB: 017550002-5 Rev B; P/N 417550023-3</b><br/>         BIOS: U20, V 1.07.00.00 (Flash EN25QH16A-104GIP )(changed)<br/>         U24, Bootloader version V2.0 (changed)<br/>         U24, V6.11.0.0 (P1C32F675F512L)(changed)<br/>         U33, U33_20180514.bin(SST25VF020)(web page of IP-60)(changed)<br/>         U41, VGA/DVI DDC (checksum AD,8E)(no change)<br/>         U31,37, HDMI(P2/P3) (checksum AD,DE) DDC(no change)<br/>         U34, HDMI(P4) DDC (checksum 7E,46) (no change)<br/>         U19, DP DDC (checksum 91,70) (no change)</p> | <p>ECN#<br/>TW870688<br/>032</p> |
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| July 6, 2021 | 23 to 24 | <p>Scalar firmware on U20 change to V1.08.00.00:<br/>Change details</p> <p>(1) Add panel support :</p> <p>(a) Support LG LM238WR2-SPE1 (3840x2160) eDP1.2 10V panel:<br/>SW3 (#1~8) ON ON OFF ON OFF ON ON OFF<br/>SW4 (#1~6) All OFF</p> <p>(b) Support AUO G270QAN01 (2560x1440) LVDS panel:<br/>SW3(#1-8): OFF OFF ON OFF ON OFF ON OFF<br/>SW4(#1-6): ON OFF OFF ON OFF OFF</p> <p>(c) Support Panasonic VVF24P185H00 (4096x2160) LVDS panel:<br/>SW3 (#1-8): ON OFF OFF ON ON ON ON OFF<br/>SW4 (#1-6): ON OFF OFF OFF OFF OFF</p> <p>(d) Support Tianma NL256204AC16-01 (2560x2048) LVDS panel:<br/>SW3 (#1-8) : ON-ON-OFF-OFF-ON-OFF-ON-OFF<br/>SW4 (#1-6) : OFF-ON-OFF-OFF-OFF-OFF</p> <p>(e) Support LM215UH1-SPA1 (4096x2304) eDP1.2 panel:<br/>SW3(#1-8): ON-ON-ON-OFF-OFF-OFF-ON-OFF<br/>SW4(#1-6): OFF-OFF-OFF-ON-OFF-OFF</p> <p>(f) Support NEC NL192108BC18-06F 1920x1080@60 8bit eDP1.2 HBR panel:<br/>SW3(#1-8): OFF-OFF-ON-ON-ON-ON-ON-OFF<br/>SW4(#1-6): OFF-OFF-OFF-ON-OFF-OFF</p> <p>(g) Support JOLED EPM216Q**** 3840x2160@60 10 bit eDP1.2 panel:<br/>SW3(#1-8): ON-OFF-ON-OFF-ON-ON-ON-OFF<br/>SW4(#1-6): OFF-OFF-OFF-OFF-ON-OFF</p> <p>(2) Fix OSD Menu "Auto Source Seek" missing "c" character</p> <p>(3) Disable the spread spectrum function and Disable the panel power output when port switching trying to fix the flickering image on AUO M320QAN01.0 using<br/>SW3(# 1-8): ON-OFF-ON-OFF-OFF-ON-ON-OFF and<br/>SW4(#1-6): All OFF setting.</p> <p>(4) Set audio level so 75% to 100% to avoid audio quality get distorted when increase the audio level above 80% volume.</p> <p>(5) Add renaming port name feature</p> <p>(6) Add to support User Gamma LUT.</p> <p>(7) Fixed Color mapping when DVD Player connected to HDMI 2.0 port (P4)</p> <p>(8) Fixed no function of some DDCCI command (Color Temp, Input Source)</p> <p>Hardware no change</p> <p>Bare PCB: 017550002-5 (Running change to Rev C); P/N 417550024-3<br/>BIOS : U20, V 1.08.00.00 (Flash EN25QH16A-104GIP )(changed)<br/>U24, Bootloader version V2.0 (no change)<br/>U24, V6.11.0.0 (P1C32F675F512L)(no change)<br/>U33, U33_20180514.bin(SST25VF020)(web page of IP-60)(no change)<br/>U41, VGA/DVI DDC (checksum 6E,8E)(changed)<br/>U31,37, HDMI(P2/P3) (checksum AD,DE) DDC(no change)<br/>U34, HDMI(P4) DDC (checksum 7E,96) ( changed)<br/>U19, DP DDC (checksum 91,70) (no change)</p> | ECN#<br>TW870688<br>130 |
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| <b>Prepared by: DV-HK</b> | <b>Date: 6 July 2021</b> |
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