

## SVX Firmware Changelog

Version: **4412**  
(since vers. 4352, 14.Feb.2018)

Date: 24.10.2019  
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Version: 4368

### Improvements:

- Sound input and output is better synchronised to improve sound quality.
- Autoupdate will be able to be used when extender arrives in factory state, without having to reload a new firmware version.
- USB low-speed HID mode much improved: Better keyboard performance and now mouse is also supported. Must turn on USB Compatibility Mode.
- Improved diagnostics capability added. Useful for detecting problems in network cabling.

### Bug Fixes:

- USB hubs were not being correctly detected on OS start on newer PCs. This has now been solved.
- USB device enumeration bug fixed. Caused problems with Linux computers that were never restarted leading to devices not found.
- Video stability improved. Further reduced chance of worst case PCBs causing video problems.
- Auto-Update was sometimes not triggering when it should have. Now fixed.
- In LVDS variations, Fix DDC 800x600 was incorrect. Now fixed.
- New synthesiser chip on hardware revision 1.5 was incorrectly configured leading to unstable output video with some monitors.
- A variety of bugs in the Show Last Image feature have now been corrected.
- Certain frame rate changes without video resolution changes were not correctly detected.

Version: 4374

### VHDL top modifications:

TX modified: DDR output cells transports also TXclock with no skew, now with 20mA drive.  
Further noise reduction by resetting the fiber and copper lines of the interface currently not in use  
registered copper and fiber I/Os from CGB\_RXC125 and LGB\_RXC125  
removed external fract board support  
added register `lw_ena_reg` for easier routing  
reduced `pixfrq` by 2 bit to save resources  
`yuv2rgb`: included rounding value in `yy_in <= y_in & X"80"` to reduce timing and resources  
SCL is modified to drive also to high level, this reduces crosstalk from video.  
On the ITS manufactured boards no proper function was with the remote synthesizer.  
On the local unit, there was unstability reading and sending the pixelclock and also VSY and VBP  
modified `sdram_ctrl` removed `pix_in` and `ofifo_din` registers now it works also for ESMT SDRAMs

### `sdram_ctrl.vhd`:

set `KEY_MAX` to "1110" to reduce network traffic,  
along with `v_retrace` not to overrun the remote video decoder fifo

### C Control Program changes:

receiver mainloop additional blanking if `hsync` alert  
Lantiq `reg17` modified to 0xB500 to ensure the proper skew  
Attention: setting this register has only effect if it is done after chip reset  
Later modification can be read back but doesn't have any influence  
Build in some improvement from `MX_16` regarding 1920x1200 and stripes including a fixed DDC with better values

Version: 4384

Version: 4389

Improvements:

- Sound input and output is better synchronised to improve sound quality.
- USB low-speed HID mode much improved: Better keyboard performance and now mouse is also supported. Must turn on USB Compatibility Mode.
- Improved diagnostics capability added. Useful for detecting problems in network cabling.
- Will appear as a monitor to a PC faster after power on.
- Made devices more robust in regards to corner case network errors.
- Further stability improvements
- Internal Flash SPI interface more robust
- SDRAM Interface to cpu established, allows calibration
- DDC\_CI integration
- Copper Phy Interface delay adjusted
- SDRAM ctrl Timing improved
- USB lowspeed improved
- USB Remote handling improved for Mice with 16bit coordinates
- USB Remote LED handling
- USB save feature more save
- USB Emulation Mode introduced for superfast USB switching
- VGA handling improved
- VGA Auto pixel adjustment improved
- FPGA speedgrade qualifying
- SFP temperature measurement
- 1000 Base-T Phy signal quality indication
- OSD shows orange if the fiber connection to local is lost.
- Included VGA 1920x1200 videomode table
- Added flash\_Test on local unit
- Added Additional support for customer touchscreen
- Stability improvements for older PCBs.
- Ilink unknown packet handling improved
- I2C Bus SCL pulls active high now for noise improvement
- cpu\_clk generated with clkdiv instead of PLL
- Power on Reset stability improved

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- Video stability improved. Further reduced chance of worst case PCBs causing video problems.
- Auto-Update was sometimes not triggering when it should have. Now fixed.
- In LVDS variations, Fix DDC 800x600 was incorrect. Now fixed.
- New synthesiser chip on hardware revision 1.5 was incorrectly configured leading to unstable output video with some monitors.
- A variety of bugs in the Show Last Image feature have now been corrected.
- Certain frame rate changes without video resolution changes were not correctly detected.
- Fixed DDC handling and USB recovery from emulation mode
- Fixed LVDS clock invert
- Fixed Stick update Bug
- Fixed Bug with Touchscreen

Version: 4412

Included VGA 1920x1200 videomode table  
rework SPI Interface, drive level adjustment  
Local SDRAM phase 0  
Added flash\_Test on local unit  
Fixed LVDS\_CLOCK problem on LVDS version  
Changed Firmware can now be downgraded to versions other than 80xx  
Red frame appears if no USB at PC  
Fixed USB status display and Reset after Autoupdate  
Protect CPU clock after booting  
MVX Copper Version uses unused Fiber data connections as shield  
Adjusted some DDC settings (OEM customer)  
Corrected phase Adjustment for different SDRAM types.

Improvements:

- USB now supports Webcams if USB option is installed
- VHDL code improvements on timing and LVDS support
- No red frame when keyboard is not connected to remote unit

Bugfixes:

- Master Reset (Automatic Update)
- Firmware Corrupted Message
- USB mode display in Status Menu

Known Bugs:

- Keyboard is displayed as plugged in, even if none is connected