

fmsx_history

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WRITTEN BY		August 8, 2022	

REVISION HISTORY

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Chapter 1

fmsx_history

1.1 "

History

2.2: (06-06-99)

- Rewrote the entire VDP command set. New commands clip correctly in all cases and will not enter infinite loops. Many games work correctly now.
 - Fixed a potential hang-up when the emulator started executing an empty page 0.
 - Fixed a dangerous bug in FM-Pac emulation. Added some minor improvements.
 - Fixed an error in color initialization. This mostly caused bad colors on screen 8.
 - Fixed a bug in joystick handling. Sometimes joystick 1 and 2 swapped places. Athletic Land can be played with a joystick now. Thanks to Roderick Mouthaan for reporting this.
 - Improved the VDP interrupt mechanism. As a result, screensplits are more stable (making Xevious playable and many other games far more attractive to look at), and Golvellius works.
 - Another color bug found. Quarth can be played now.
 - Improved interrupt handling. Potential interrupts that are not started are no longer 'saved' for later use, they are simply ignored now.
 - Changed SCC frequency calculation a little. High frequencies should sound a little better now. Thanks to Roderick Mouthaan for reporting this.
 - Fixed a bug that caused a stream of error messages during startup if a cartridge was specified as a commandline argument. Thanks to Roderick Mouthaan for reporting this.
 - Improved refresh routines for screen 4. Space Manbow and Firehawk are playable now.
 - Added a semaphore in a rather critical place. This may fix some crashes, especially during reset.
 - Placed disk access routines in a separate task. This fixes a potential deadlock condition.
 - Fixed the bug that caused the crash when a HALT was executed while interrupts were disabled.
 - The text in the progress indicator bar is now visible for a longer time before disappearing.
 - Further refinements to the interrupt system. Psycho World runs now.
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Also, the whole interrupt mechanism has become a lot faster.

- Improved the palette handling to allow Psycho World to run correctly.
- Greatly increased the speed of the palette handling when running on a public screen. It might also pick better colors.
- Removed the video refresh task. Its last few remaining duties are now performed by the timer task.
- Implemented border colors.
- Fixed accidental ROM mapping that sometimes occurs in ROMs that are not megaROMs. This fixes Magical Wizkid, Volguard and others.
- The real version string is now visible, instead of the version string for the preferences file.
- Fixed the ARexx port, which had become bugged in fMSX 2.1.
- Yet more changes to the interrupt mechanism. The SMA intros work now. However, the new interrupt handler is much slower than the old one. Since the new-style interrupt handling is almost never necessary, it is now possible to choose between fast and accurate interrupt modes.
- The CyberGfx routines for MSX1 sprites accidentally drew transparent sprites as black sprites. Fixed.
- Improved the drumsounds in PSG/SCC mode. It was a little too quiet.
- Added an autofire feature.

2.1: (16-04-99)

- The new Z80 engine is simply too difficult to be any fun. Developing it further would be possible, but my life is difficult enough as-is. Therefore I decided to return to the old engine.
- Fixed numerous bugs in the (old) Z80 engine. Registers were being trashed, and the overflow flag was not calculated correctly for subtractions.
- Increased speed of Z80 engine somewhat.
- Added support for FM-PAC emulation through the Concierto soundcard. Instruments still need finetuning, but on the whole it sounds pretty much spot on.
- The palette is now always valid for the largest screen area only. This avoids the flickering if multiple screen areas with differing palettes are present (such as in Dragonslayer IV or Hydlide 3).
- Greatly increased the access speed of the realtime clock. Among other things, this makes Ease far more useable with the mouse.
- Fixed a bug in interrupt generation. Zanac-Ex works again.
- Fixed a bug in VDP LMMC/HMMC commands. Androgynous works again.
- The ASL requesters now remember their previous coordinates, which works a lot better. Thanks to Simon Goodwin (simon@studio.woden.com) for telling me - I use RTPatch myself, and had never noticed they were not particularly nice to use.
- Palette data for color 0 was corrupted in most screens, but about the only noticeable effect was that the titlescreen of Firebird was black rather than red. Fixed.
- Temporary hack to fix to VDP clipping, improves stability which allows among others Laydock (the original disk game, not the lame cartridge) to work.
- Fixed a bug in VDP YMMM command. Super Rambo MSX2 works now.
- Writing bootblocks is once again possible.
- The mouse pointer is cleared when emulating the MSX mouse in full screen mode. This avoids having two pointers on screen at the same time.

2.0: (11-11-98)

Z80:

- Completely rewrote the Z80 engine. It now uses dynamic recompilation.

Graphics:

- Completely rewrote the graphics system. All MSX2 screens are now supported (including interlaced modes), with all sprite modes, in both native Amiga format and specialized CyberGfx format. The new refresh routines are much faster and have some support (not complete yet) for interleaving multiple MSX screens on one Amiga screen. Several old bugs are no longer present (it no longer corrupt memory during startup, and MSX2 sprite colors are now correct). Rendering routines for the native (AGA, ECS) screenmodes now use some dirty tricks for extra speed. They are no longer compatible with graphics cards (but now there is real CyberGfx support).
- Double buffering is now done automatically. AGA modes are always double buffered; CyberGfx modes never.
- The video refresh task doesn't change its name anymore. This should help people who are using screen promotion tools. However, there is no need to promote fMSX anymore.
- The 'Screen anchoring' feature is now automatic, and a bit smarter than before.
- Removed a nasty bug from all the MSX2 screens. It was corrupting memory during initialization of those screens.
- Screens are now always opened using their nominal size. The MSX screen is centered in the Amiga screen.
- Removed a very stupid bug that caused a newly opened screen to be activated regardless of its previous state.
- fMSX can now also run in a window on any public screen. CyberGraphics is required for this magic.
- Removed highspeed mode. The code for this had slowly become unmaintainable and does not fit in the new model for video emulation now used by fMSX (in other words, it cost too much speed in the other modes to keep it in).

GUI:

- Completely rewrote the GUI. It now uses BOOPSI instead of GadTools. The BOOPSI toolkit used is the one that is in development for Merapi (the Java engine from Haage&Partner). They have been built in to fMSX to allow testing and further refinement.
- Rearranged the GUI for greater clarity and usefulness. Most notably the disk functions have been added to the main window.
- Added a window for finding infinite lives and other cheats.
- Added a window for viewing and changing MSX memory.
- Added a window for changing Z80 preferences.

Misc.:

- Added drag&drop support for floppies. Additionally, floppies can now be specified on the commandline as well.
 - .info files can now contain many initialization parameters (any parameter that works in the preferences file will also work in a .info file). In addition, diskimages and directories of diskfiles can have their own .info files with parameters that are activated
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when the diskimage or directory is loaded.

- Rearranged the initialization sequence. This should put an end to many inexplicable crashes during or right after starting the program.
- The diskroutines now only look at the lowest bit of the disk selector instead of the entire byte. Although this is incorrect, it avoids problems with badly-written MSX software that passes spurious values to the diskroutines. This would cause the "FindUnit: unexpected value passed." error message.
- Hardfiles of type .IMG and .DDI are now also recognized.
- Added automatic diskimage creation from directories filled with MSX files.
- Placed several large blocks of data in an external file. This frees up 104K of memory.
- Implemented the second Kanji ROM. It is only available in MSX2+ mode.
- Implemented the MSX2+ ROMs. NO MSX2+ FUNCTIONALITY YET - JUST THE ROMS! The reason? To allow the second Kanji ROM to work ;-)
- Found a serious bug that has been in there for ages, which must have made it totally impossible to run fMSX on a v36 machine. As a consequence fMSX now once again requires v39 - apparently noone needed that v36 version.
- Implemented the MSX numeric keypad which some MSX machines have. The pause key is now 'enter' ('*' is used by the MSX). Note that ',' is located under the ')' key.
- Added mouse support.

1.4: (12-05-97)

- Multiple MSX fonts are now supported.
 - Updated the VDP command emulation from the newest UNIX sources. Among others, Treasure of Usas and Strategic Mars work now.
 - It was possible that the sound was activated while the emulation was paused. Corrected.
 - Added support for the Kanji ROM.
 - Rewrote the following VDP commands in assembly: LMMM, LMMC, LMMV, HMMM, HMMC, HMMV, PSET, and STOP. The new commands are much faster and clip correctly, which solves a lot of guru's.
 - Corrected a memory corrupting bug in the screen 6 refresh routine. This caused the flickering during the MSX2 boot sequence.
 - Fixed music mode. It now closes the screen as it is supposed to do.
 - Defaults for display modes are a bit more sensible now. Thanks to Mark Knibbs (markk@netcomuk.co.uk) for reporting this.
 - Added crude line interrupts for screen 5. Refinement and other screens will follow.
 - Added a window for setting paths to external resources.
 - Fixed highspeed mode for OCS/ECS machines. There may be some trash left at the bottom of the screen but at least the entire screen is visible now. Reported by Mark Knibbs.
 - Odd frames are now also blanked when necessary in highspeed mode.
 - Preferences are now saved to ENV:, and can be loaded and saved at will.
 - Direct color loading is turned off when the MSX screen is not active. Again, thanks to Mark Knibbs.
 - Added an ARexx port.
 - Added support for playing SCC and PSG at the same time, through AHI.
 - Added support for SCC+.
 - Added support for disabled SCC channels. This solves the random
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beeps in Parodius.

- Made the double buffer method user-selectable, to allow CyberGfx users to choose v36-style double buffering.
- fMSX was taking too much time when the MSX window became inactive. This caused the Amiga to drop upstroke events of the left mouse button. Fixed.

1.3: (20-02-97)

- fMSX can now create diskimages.
- Changing diskimages on the fly was broken.
- MSX2 sprites no longer have their colors drawn upside down. Firebird and Metal Gear 2 look much better now.
- Screen 7 has sprites now. As with screen 5, only 16*16 sprites are supported. This will be improved.
- Added support for tape. It's now possible to save your position in Metal Gear, Payload, and several others.
- There is no more need to 'insert' disks manually.
- Disks or diskimages can now be selected from a requester.
- Removed quite a few bugs from the doublebuffering routines. The system won't hang anymore when changing screenmode.

1.2: (28-01-97)

- Added support for screen 8.
- Added screen anchoring.
- Added support for 40-track disks.
- Added support for disk images. These can be changed on the fly, a feature that is carried over to device-based disk emulation.

1.1: (12-01-97)

- RAM is now swapped in during disk operations. This should lead to higher compatibility. Thanks to Sergi Martinez for reporting this.
 - C2P was slightly improved, causing faster screen updates in screens 5 and 6.
 - The MSX memory system was revised. This allows a 32K memory usage reduction when using cartridges.
 - SCC now also works with diskloaded games.
 - The ROM mapper was slightly improved. F1-Spirit works now.
 - A serious error in the ROM mapping caused the Konami 1 and ASCII 2 megarom types to fail completely. After reparations were complete Androgynous started working, as will no doubt many other games.
 - The memory mapper now always reacts to writes to ports 0xFC..0xFF. This should enhance compatibility.
 - All instructions that are emulated on 68060 have been replaced.
 - The GUI was rewritten to use a (simple) GUI layout engine.
 - A long-standing error in drive allocation was removed.
 - Access routines were added for all gadgets. This greatly simplified the internal structure of fMSX and the preferences system.
 - Added the ability to load a cartridge by dropping an icon on any of the windows.
 - Added a key for pausing the emulator and returning to the workbench.
 - Added the ability to start cartridges directly after selection.
 - The ability to run on the workbench was removed. It may reappear later.
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- Colors were not set in highspeed mode. This has been corrected.
- An elaborate system for mapping MSX screenmodes to Amiga screenmodes was added. This allows far better configurability for people with VGA monitors.
- The MSX version is now saved in the cartridge icon as well.
- Loading 16K ROMs was broken. Fixed.
- Something caused garbage to be visible on screens 5 and 6 after they were opened. Fixed.
- Screens 5 and 6 refresh smarter and therefore faster now.
- Screens 5 and 6 are initialized much quicker.
- Colorchanges can now be applied to the screen as soon as they occur, which is necessary for certain graphical effects.
- Added limited (no sprites) support for screen 7.

1.0: (14-07-96)

- Screen redraw was completely rewritten as a separate task. This means redrawing is a lot more regular than it used to be.
- Rewrote handling of VDP blanking. There was really no need to have separate routines for each screenmode.
- Because many more video preferences are planned these have been given their own window. Some options from the old preferences window have been moved to this new window.
- Added the ability to ignore the VDP blanking bit. This is necessary because blanking is handled globally, and some games only turn off the screen for certain scanlines.
- Implemented alternate colors, colorblinking, 26.5 line mode, and running on the workbench for screen 0 (80).
- Changed the way the second joystick is activated from Amiga-J to ' (' on the numeric keypad.
- Implemented music mode.
- Removed a spurious memory allocation. Chip RAM usage dropped by 64Kb.
- Implemented double buffering.
- Added the option to hide the title bar of the MSX screen.
- Removed a memory-corrupting bug from highspeed mode, courtesy of Børge Nøst.
- Rewrote highspeed mode. It is far more OS-friendly now, but still as fast as it used to be. It should give no more trouble now.

0.8: (10-03-96)

- Supports two joysticks.
 - Many Z80 commands were implemented. Arkanoid and Dambusters run fine now.
 - Interrupt Mode 2 was implemented.
 - Sergi Martinez pointed out a way to increase emulation speed by 30%.
 - Removed a couple of errors from the Z80 emulation.
 - Removed a memory corrupting bug from the SCC routines. SCC sounds cleaner now.
 - Made a fresh start with emulating screens 5 and 6. It's a bit slower now but a lot more stable. Speed will follow later.
 - Made some algorithmic changes to the way screen 2 is refreshed. It's much faster now, which means that Confused, Apeman, and others have become very playable.
 - Don't know what caused it, but after poking around an afternoon in the graphics emulation the 'corrupted graphics' bug that showed up in almost every Konami game is gone.
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- Two new megaROM mapper modes were added, and the others were revised.
- Soundmode is saved in the cartridge icon.
- No longer forgets the last part of the cartridge pathname when saving preferences.
- Separated the history from the rest of the documentation.
- Added an option to suppress the automatic saving of preferences, as well as a menu option to save those preferences by hand.
- Changes in videomode are directly copied to the screen.
- Added limited sprite support to screen 5.

0.7: (28-10-95)

- The MSX will now recognize if the Amiga makes a change to a disk.
- Found and corrected a memory-corrupting bug.
- Resident programs will be flushed when Reset is pressed.
- Z80 emulation completely changed. MegaROMs are much faster, the rest is a bit slower.
- Memory mapper support added.
- Limited support for the SCC sound system added.
- Handling of cartridge filename is much better. It now appears in the requester and the path is remembered between sessions.
- Removed several minor errors from the drive allocation code.
- Improved support for screen 0 (faster, 80 columns).
- Removed the check that cartridge files are really cartridges. This is the software equivalent of an SCC switch.
- Rewrote critical memory management routines in assembly.
- Implemented many VDP operations.
- Partial support for screens 5 and 6 added.
- Now compatible with the v36 OS.
- Includes MSX2 ROMs.
- Several new options: freeze screen while window is inactive, use MSX2 ROMs, use internal ROMs only.

0.6: (23-08-95)

- Drive support added!
- A two-line enhancement to the VRAM-write scheduler causes a great deal of speedup in some games, for instance Tank Battalion.
- The user interface was enhanced and offers a lot more functionality now.
- The Z80 emulation is smaller and faster than before.
- Preferences are now automatically saved when quitting fMSX.
- No longer hangs when the right mousebutton is pressed in highspeed mode.
- MSX2 ROMs didn't work in v0.5. Fixed.
- Fixed a bug in the MSX2 palette code.
- Highspeed mode is automatically turned off if the fMSX screen is deactivated. This means that it should no longer hang if for some reason a window on another screen becomes activated.
- Added requesters for most errors and warnings.
- Removed the ability to use two cartridges at once. This will return in a future version.

0.5: (17-07-95)

- There was a bug in 0.4 that caused the emulation to run a lot slower than necessary.
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- A simple change to the bankswitching code caused some speedup, especially notable when starting with MSX2 ROMs.
- If one of the libraries could not be opened the general shut-down routines would still call functions from that library.
- No longer hangs when it cannot allocate sound channels.
- Rewrote some of the documentation.
- Added high-speed video refresh mode for screens 1 and 2.
- Rewrote the PSG emulation. As a consequence, the Dunkshot music no longer suffers from random beeps.
- Added noise to the PSG emulation.
- Sound output is a lot softer now, which allows for far better white noise emulation.
- The joystick now supports two firebuttons.

0.4: (02-04-95)

- Joined the ROMs together to one file.
- The ROMs are now internal, but external ROMs are still possible.
- It no longer closes and reopens the screen if the new screen has the same size and depth as the old one.
- The GUI has been made font sensitive.
- Started work on the hardware hitting screen drivers.
- Changed DoOut, DoIn, and VDPOut to conform to fMSX UNIX 0.7.
- Added VDP operations directly from fMSX UNIX 0.7.
- Will load MSX2 ROMs if available. MSX2 BASIC runs, but starting takes a long time.
- Screen 6 implemented (crudely).
- Fixed the problem with the joystick mechanism. Protector and Volguard work fine now.

0.3: (08-03-95)

- Some important routines were recoded in assembler, giving a nice speed increase.
- Turned off the low-pass filter for more authentic sound.
- Transparent sprites are made invisible.
- Task priority is lowered to -1.
- Uses a greater volume range (0-63 instead of 0-60).
- Keyboard handling is a bit smoother on slow machines.
- Keyboard mapping has changed.
- Removed the bug that caused the humming sound in Eggerland Mystery, Dunkshot, and other Hall Laboratories games.
- Rewrote the video drivers for greater speed.
- Sprites are now clipped against the top border.
- Interrupts are limited to at most 50 per second.

0.2: (20-02-95)

- Now supports loading two cartridges (for use with the Gamemaster).
 - A GUI was added. It's topaz-8 sensitive for now.
 - The help key is no longer used to quit the emulation, so insert works now.
 - The interrupt mechanism was somewhat enhanced.
 - It is now possible to set the number of interrupts per screenredraw.
 - Added the ability to set the number of instructions per interrupt.
 - Added joystick support for one joystick with one button.
 - Refresh cycle and interrupt period are read from the cartridge icon.
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- Added a 'save configuration' option.
- The emulator now detects if no sound channels could be allocated and runs without sound if so.

0.1: (13-02-95)

- Screens 0..2 should work with ECS and graphics cards now.
- Sprites are clipped horizontally.
- Sprites support shift-left bit.
- Screens are no longer specified as being PAL.
- Screen 3 works fine now.
- Sprites no longer flicker.
- Sound is much better now, though some bugs remain (specifically: no noise generation, and no effects on channels 1 and 2).
- Vertical sprite position was off by 1 pixel.
- Removed a glaring bug that prevented 32K cartridges from loading. Software compatibility jumped to 85%.
- Added the ability to load a cartridge when starting from the workbench.
- Video emulation now respects the Disable Screen bit.
- Sometimes sprite number 0 wasn't displayed.
- Enlarged sprites were broken.

0.0: (09-02-95)

- First release. This is only for internal review, but people who really wanted it could get it as well.
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