



“Don’t mute, mutilate!”

GraffitiTV (USA Pat. Pending) is a device which gives a television viewer the ability to “draw graffiti” on television programming by imposing special effects on the audio and video streams. Imagine being able to *do* something about an incessantly irritating personality, like flushing her down a toilet!



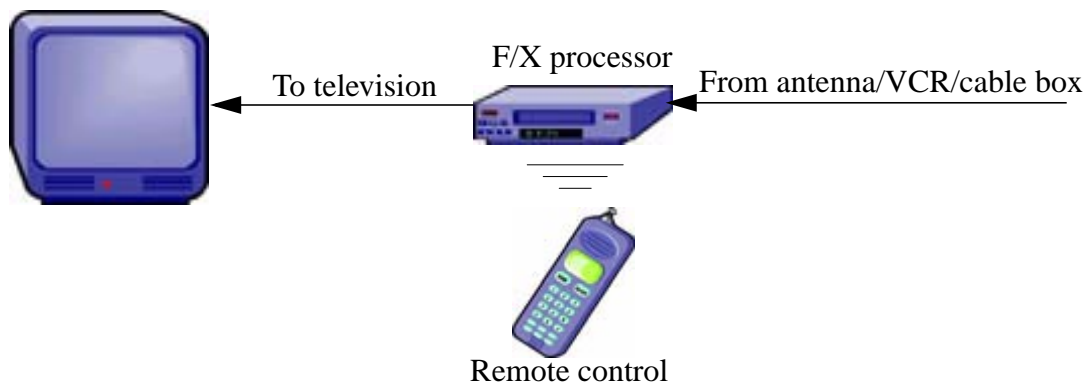
Down she goes!

(See JAVA animation at www.corecomm.net/portegys/flush.html)

There are two versions of the unit: basic and advanced. The advanced model contains all the capabilities of the basic plus much more.

Basic Model.

The basic model consists of a modular F/X (special effects) processor that intercepts and manipulates the audio and video streams entering the television, and a wireless remote control:



While other products such as ReplayTV (replaytv.com), TiVo (tivo.com), and UltimateTV (www.ultimatetv.com) allow a user to exert VCR-like control over live television (pause, rewind, slow-motion, etc.), only GraffitiTV allows a user to apply entertaining modifications to the audio and video streams. In fact, GraffitiTV can be used in conjunction with the aforementioned products to achieve even greater television viewing satisfaction.

Special Effects:

- ***Freeze (unfreeze):***

This effect takes a snapshot of the current screen, much like the VCR pause function. Other effects may then be applied to it. For example, the user may wish to freeze the screen when a certain celebrity or political figure appears on it to add personal “adornments”. The freeze effect can also be toggled to continue the action.

- ***Audio:***

Belching, groans, moans, panting, and smooching sounds (controllable intonation).

“For God’s sake, stop this!”

“I can’t hear you!”

“I hate/love this!”

“I’m mad as hell and I’m not going to take it anymore!”

“Sure!” (sarcastic)

“They’re coming to take me away, ha ha!”

“This sucks!”

- ***Animation (audio-video):***

Big nose appears, sniffs and goes “ewwww...”.

Bugs crawl on screen.

Cracking and crumbling: screen falls apart to rumbling sounds.

Demonstration mode: cycle through all effects to show what they do.

Dog sniffs around on screen, lifts leg and pees.

Flushing: screen appears to swirl down a drain to sound of flushing.

Giant tongue slurps and “smears” screen.

“GraffitiTV” logo with audible count-down (for snack run).

“Insect eye” faceted view of many channels.

Prank random channel change (who has the remote?).

Screen “rolls up” into cylinder (like a window shade or parchment);

while rolled up, audio is muffled.

Sweet music and scenic view for relaxation.

- ***Interactive:***

General drawing and painting with various possible pen/brush types and colors.

Acid drops: “burn” holes in screen.

Bubbles: pump up part of screen until it pops, or popping bubble-wrap.

Bullets: blow holes in screen.

Cut out pieces of screen with scissors or buzzsaw and move pieces around

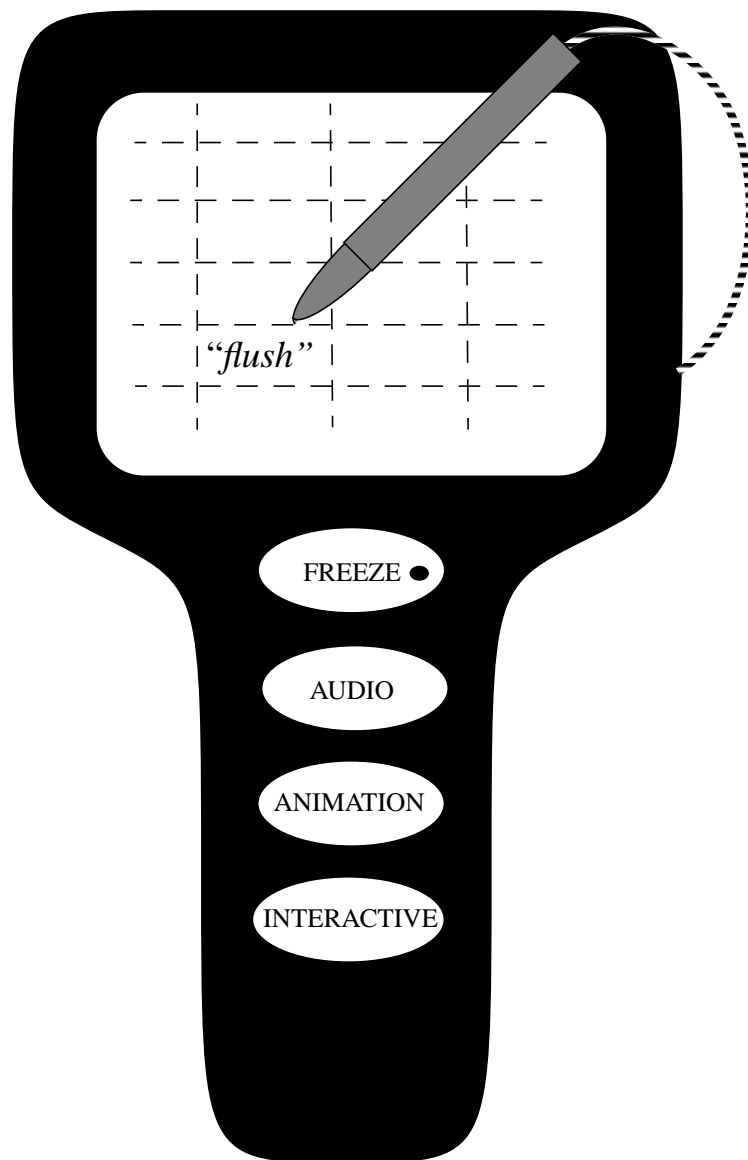
(both in freeze mode and while original areas of screen moving on pieces)

Cream pies: splatter on screen.

Drop rocks into screen with water-like ripple effect.
Flame that burns outward and upward.
Exploding bombs: set on screen with burning fuse to later “explode”.
Pigeons “bomb” screen.
Puke on screen with sound.
Puzzle: screen automatically cut into puzzle pieces and scrambled for user to assemble
(both in freeze mode and while screen moving on pieces)
Smoochies with lip marks on objects of affection.
Stretch and pull images using stylus.
Sucker darts: shoot on screen.
Tetris: falling pieces of screen must be assembled into picture by user (freeze/unfreeze mode).
Tile-puzzle: user pushes screen pieces to assemble picture (freeze/unfreeze mode).
“Wheel of fortune” or “Eight ball” channel selection game.

Remote Control.

The user interface is embodied in the remote control, which features a drawing pad with attached stylus. The drawing pad is a pressure-sensitive display device. By touching and moving the stylus on the pad, a user can select locations and draw on the television screen, as well as select effects from menus appearing on the pad. The stylus is a “clickable” device, capable of sensing two pressure states, light and firm. The light pressure state is typically used to move a pointer on the television screen; the firm, or clicked pressure state is used to select a location or drag an object. Four buttons are also provided to transition into the four categories of special effects: freeze, audio, animation, and interactive.



Remote Control

As an example of the use of the remote control, consider the “flush” animation effect. To do this, the user presses the “animation” button, which causes the animation options to appear on the pad. The user then presses the stylus on the “flush” effect to cause it to happen.

As an illustration of the use of the clickable stylus, consider drawing on the television screen. The user first presses the “interactive” button, selects the “draw” effect on the pad, and then draws in the following manner: moving the stylus lightly on the pad causes a pointer to move in a corresponding manner on the television screen; pressing down (clicking) and moving the stylus causes the pointer to draw lines on the screen.

Advanced Model.

In the advanced model, the F/X processor can be connected to a computer and the internet to provide a variety of features. Owners of the basic model may also later upgrade into the advanced model by purchasing a plug-in cartridge and software package. Since the processor must remain in proximity to the television, the computer connection may be done via wireless technology (e.g., Bluetooth - see Technology and Cost section).

Features:

- **Internet downloading:** New special effects may be downloaded from the official GraffitiTV web site or elsewhere on the internet. These new effects become available on the remote control when it is synchronized with the F/X processor.
- **Personal productions:** Software will be available that will allow you to create an original special effect which you can use and upload to a web site. Effects can also be made with commercial graphics software, such as *Commotion*. Audio and video clips from television, movies, or other sources can be recorded and used in producing special effects.
- **Automatic/timed player:** The F/X processor can be programmed to recognize part of a movie, television show, or commercial and automatically trigger selected effects to play. This would allow you to automatically “editorialize” a noxious commercial, for example. Effects can also be programmed to play at specified times.
- **Personal profiles with access codes:** The unit is customizable for different users, e.g., a person may want a specific set of effect options to appear in a menu.

Web Site (graffitv.com):

- **Special effects database:** People all over the world can post GraffitiTV special effects to share with others. These will be categorized into age group sections to prevent children from accessing inappropriate material.
- **Idea and comment board:** A section of the web site where people can make comments and suggestions for GraffitiTV producers and users.

Technology and Cost.

In this section, evidence for the technical feasibility and cost-effectiveness of the GraffitiTV is provided by citing relevant technologies and other products related to these GraffitiTV functionalities: image capture, remote control, embedded software, and special effects. Roughly weighing this information, we believe that the basic model can be produced for less than \$200 (U.S.) per unit.

Image Capture:

Numerous products exist for capturing audio and video streams in various formats and converting them to other formats, such as MPEG, suitable for manipulation. The following are examples of this technology:

- CapView USB Video Capture Device from Lifeview (www.lifeview.com). Full motion video capture in AVI format; still frame capture in BMP or JPG. (\$59.00)
- Dazzle Digital Video Creator (www.dazzlemultimedia.com). “The premier MPEG digital video adapter for creating TV-quality video on your PC”. Includes not only image capture, but also editing and publishing capabilities. (\$279.95)
- “iView” USB motion and still image capture (\$119.95) from Ariston Technologies (www.ariston.com). Video input in NTSC/PAL/SECAM; output in Quicktime. Includes a variety of software for editing and publishing. (\$119.95)
- MyVideo Plug and Play USB Video Capture and Video Output (www.eskapelabs.com). Can play back out to standard TV or video monitor; includes editing software. (\$249.00)
- iREZ CapSureUSB (\$119.95) (www.irez.com). Harnesses inputs from VCR’s, DVD players, stereo receivers, camcorders, CD players, etc.; also includes a built-in microphone and editing software.

Remote Control:

- Palm Inc.’s (www.palm.com) line of handheld PDAs are prime examples of both display/drawing pad and infrared (IR) communication technology.
- RemoteLink Technology, by Interlink Electronics, Inc., (www.interlinkelec.com) provides “a relatively high speed, multi-channel, digital/analog, optical communications link that does not interfere with signals from consumer remote controls”.
- Logitech (www.logitech.com) offers a number of wireless products, including keyboards and mice; transitioning to Bluetooth technology.
- Bluetooth technology (www.bluetooth.com) is an emerging standard for short-range wireless communications. A non-IR scheme such as Bluetooth would be beneficial for GraffitiTV to avoid forcing a user to awkwardly point the remote at the F/X box while using the stylus.

Embedded Software:

- HAVi (Home Audio-Visual interoperability) (IEEE Computer Magazine, Sept. 2000). This is a standard proposed by Sony and other electronics manufacturers as a means to allow home audio-visual equipment manufacturers’ products to interoperate. It is more specific than Jini (JAVA for embedded software), in that it is exclusively pertinent to audio-visual equipment. It is also based on the IEEE 1394 (firewire) standard. It specifies how streams in various formats (e.g. MPEG) can be routed, for example.
- Jini (www.sun.com/jini): “Network technology provides a simple infrastructure for delivering services in a network and for creating spontaneous interaction between programs that use these services regardless of their hardware/software implementation.”

Special Effects:

- Commotion 3.0 (www.pinnaclesys.com) - designed by award-winning special-effects artists and leading film makers.
- WinImages R6 (www.crystalpixels.com) for editing and enhancing images.

- Dazzle Digital Video Creator (www.dazzlemultimedia.com). See Image Capture section.
- RotoDV (www.digitalorigin.com) - filtering, editing, animation.
- Packages for Macintosh PCs:
 - Adobe's After Effects 4.0 (www.adobe.com): compositing, animation, and visual effects.
 - Apple's Final Cut Pro (www.apple.com): "A next-generation video production environment".

Inventor.

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