VIP1900 Splash Screen Design Guidelines

Bootstrap feedback

During boot the firmware outputs feedback both to the screen and to the front leds. The STB will boot using a fixed resolution and there will be a signal on all video outputs simultaneously: HDMI/components and SCART (or available analog video outputs).

The graphical output provided by the firmware indicates the boot progress using graphical items which avoid the use of textual messages. The splash screen will be shown as soon as it is available (valid image in flash or valid image in network), and will replace the default background used by firmware.

The upgrading process has one bar for normal boot, and another bar for additional information in case of a boot with upgrade.

Splash screen format

The splash screen can be a standard 24-bit BMP image or BMPv3 with RLE8 compression. This format uses RLE with 256 colors palette. The version of the splash is contained in one of the reserved words of the BMP header, and will be converted to string for comparisons with network available images for upgrade of the stored splash. It is advisable to use RLE to reduce the size of the splash screen.
The total size available for both the splash screen and the boot image is 32 MB.

Splash screen dimensions

The PAL image has a reserved area of 300x80 pixels, starting at (210, 370) pixels from the upper left corner. It contains two zones, one 5-segments area and a 10-segments area under it. The two areas are used to show progress of the boot (and upgrade).
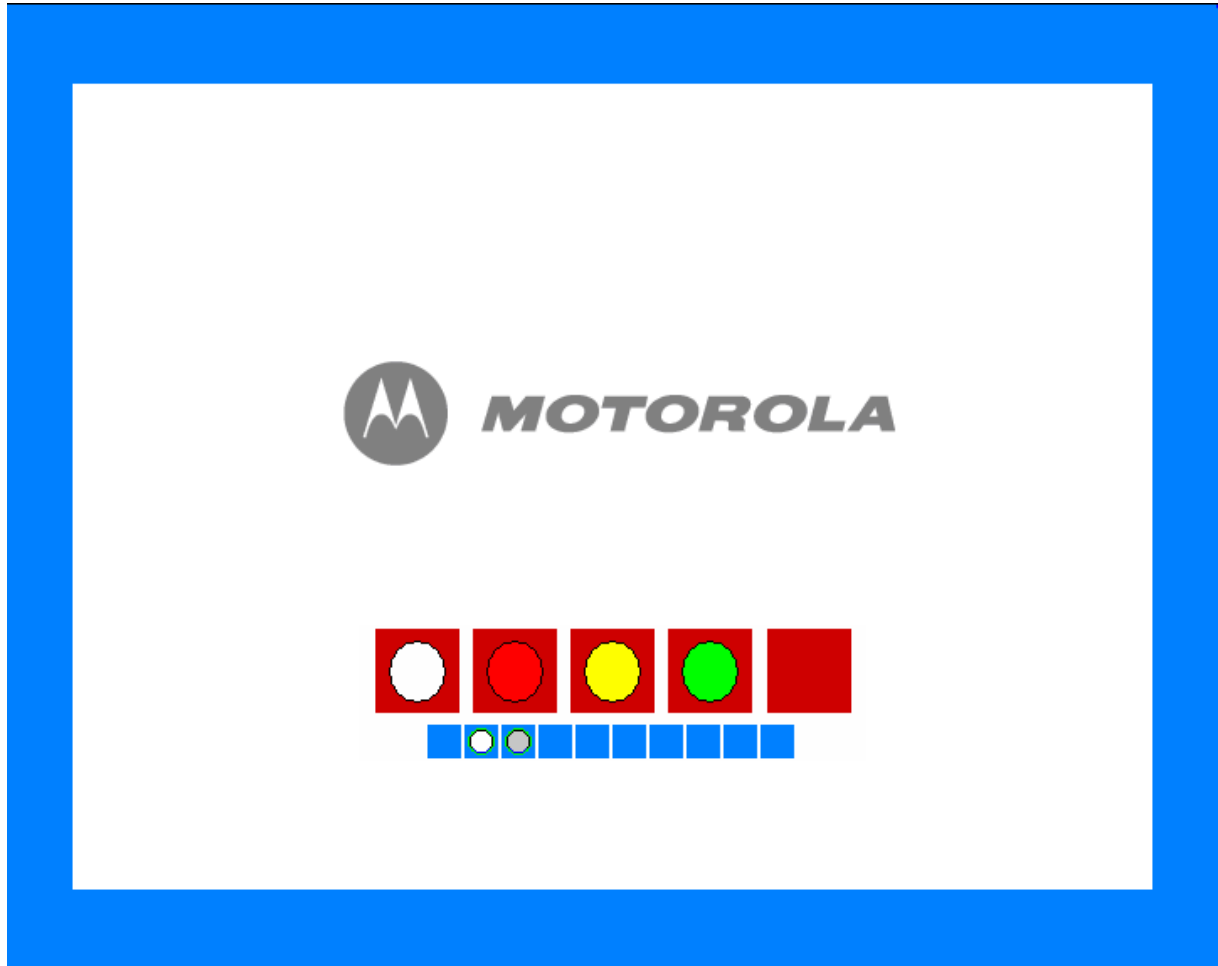
<u>5 segments area</u>

This area is composed of 50x50 segments, starting from (219,372) and separated by 8 pixels each. The splash screen should contain the values "blank", "red", "yellow" and "green" in the first four segments. These segments are used for drawing when appropriate during the boot sequence.

<u>10 segments area</u>

This area is composed of 20x20 segments, starting from (250,429) and separated by 2 pixels each. The splash screen should contain the values "blank", "empty" and "filled" in the first two segments. These segments are used for drawing when appropriate during the boot sequence.

Reference splash screen

The following picture is a reference image where the described areas are visible. It is available as a BMP-RLE8 file that can be requested to Motorola for tests and development of splash screens.

Sample picture, with splash screen regions
(including blue margin for centered 640x480 "interest area")

The 5-segments area shows the overall progress of the boot, until the first application is loaded and running. On load the first four segments in the image ("blank", "red", "yellow" and "green") will be replaced by the fifth "blank" segment.

The 10-segments area shows progress during the update of a boot image:
- Percentage of downloaded kernel image, in the proper stage
- Percentage of burned image, in the proper stage

Screen feedback

If no upgrade is going to be performed

<u>First segment</u>

It is drawn with "green" value; other values are reserved for updates.
10-segments area is kept blank.

<u>Second segment</u>

It is drawn with "green" value; other values are reserved for updates.
10-segments area is kept blank.

<u>Third segment</u>

It is drawn in blinking "yellow" by firmware when Linux kernel is decompressed and boots, will change to "green" (by the Linux kernel, once the loader is replaced) once it has booted and the middleware is starting. Will be drawn to "red" (by the firmware) in situations of kernel corruption or when the decompression fails (should not happen for a properly burned kernel). 10-segments area is kept blank.

<u>Fourth segment</u>

It is drawn in blinking "yellow" by Linux when the middleware processes and IPTV system is booting up, including DHCP acquisition, will change to "green" once it is done, or "red" if some problem happens. 10-segments area is kept blank.

<u>Fifth segment</u>

It is drawn in blinking "yellow" by Linux when the middleware applications are booting up, including Mozilla. Will change to "green" once Mozilla is running and going to fetch the local pages, or "red" if some problem happens (like a misconfigured starting page or no local pages available). 10-segments area is kept blank.

If upgrade is going to be performed

First segment

It will be drawn in blinking "yellow", until information about "bootcastinfo" object is found. If no information is received, it will change to "red". Once the image is being downloaded, the segment will be drawn in blinking "green", and the secondary 10-segments bar will show the percentage of downloaded kernel. Will change to static "green" when kernel is downloaded and verified, or "red" if either a timeout happens or if the received image is corrupted.
The secondary 10-segments bar will be blanked when this step finishes.

Second segment

It will be drawn in blinking "yellow" while the kernel is being burned in the flash (the STB could have performed a soft reboot after downloading the image).
The secondary 10-segment bar will show the percentage of burned kernel.
A "red" value will show that the burn failed, and "green" will show that the burn was ok. In both cases, the secondary 10-segments area will be blanked once the step finishes.

Once these first two steps are done, the usual boot will be done as described before.