

MARKETING REQUIREMENTS SPECIFICATION

Feature Name:	Camera Flash	Feature Number:	7693
Author:	Nathan Jenniges	Version:	1.2

1 Revision History

Date	Version	Changes	Author
28 Feb 2003	0.1	Initial Draft	Marshall Brown
19 May 2003	0.2	Updated following hardware review	Nathan Jenniges
4 June 2003	0.3	Updated following peer reviews.	Nathan Jenniges
11 June 2003	0.4	Updated all sections following 10 June 2003 formal review comments.	Nathan Jenniges
24 June 2003	0.5	Removed automatic flash and red eye reduction modes since current hardware does not support. Submit as separate features for future release.	Nathan Jenniges
25 June 2003	1.0	Baselined	Nathan Jenniges
22 April 2004	1.1	Clarified prompts/behavior for P04.3 products and after.	David Hohol
08 June 2004	1.2	Clarified Brightness adjustment for device with 2 sensors	David Hohol

2 Introduction (*REQUIRED*)

This specification presents the Synergy marketing requirements specification for multi-line graphics displays.

This specification defines how the user can use LED illumination in the camera viewfinder to enhance the quality of images captured in low light situations. The illumination capabilities will depend on the specific hardware in the device. This specification assumes LED illumination and not a 'true' strobe flash. In general, illumination settings will include on and off modes. Additional modes such as automatic flash and red-eye reduction may be added at a later date. The camera illumination must be turned on prior to image capture to allow the camera sensor time to adjust to the new light level. The illumination will be turned on at half-power during the active viewfinder mode and will be increased to full power when the user presses the capture button, providing the perception of a flash going off.



3 Related Documents/Specifications (*REQUIRED*)

ID	Title	URL
1	Synergy LITE 3 Line Functional Specification (1.4.4)	http://compass.mot.com/doc/122711887/1.4.4_3L_FS.pdf
2	BRF 7693: Flash Integrated	http://compass.mot.com/doc/112577421/BRF-7693-CameraIntegratedFlash.doc

4 Definition of Terms and Acronyms

Illumination LED-based lighting, used to simulate a 'flash'-like experience.

LED Light Emitting Diode

MRS Marketing Requirements Specification

5 Customers Functionality

No specific customer requests have been received to date. Several competitive products already support basic camera illumination functionality.

6 Existing Functionality (*REQUIRED*)

6.1 CDMA

No existing functionality.

6.2 GSM

No existing functionality.

6.3 TDMA

No existing functionality.

6.4 Synergy

No existing functionality.



7 New Implementation (REQUIRED)

The following sections shall be added as new sections within the Pictures 1.2 Release (following 45.15.2 Pictures 1.1 Release) in the Media Center Chapter of the Synergy Functional Specification v1.4.4.

0.0.1 Taking Pictures with Flash



The user can manually activate the camera illumination by selecting “Flash” from the context-sensitive menu. The following figure illustrates turning the illumination on/off and taking pictures with the illumination.

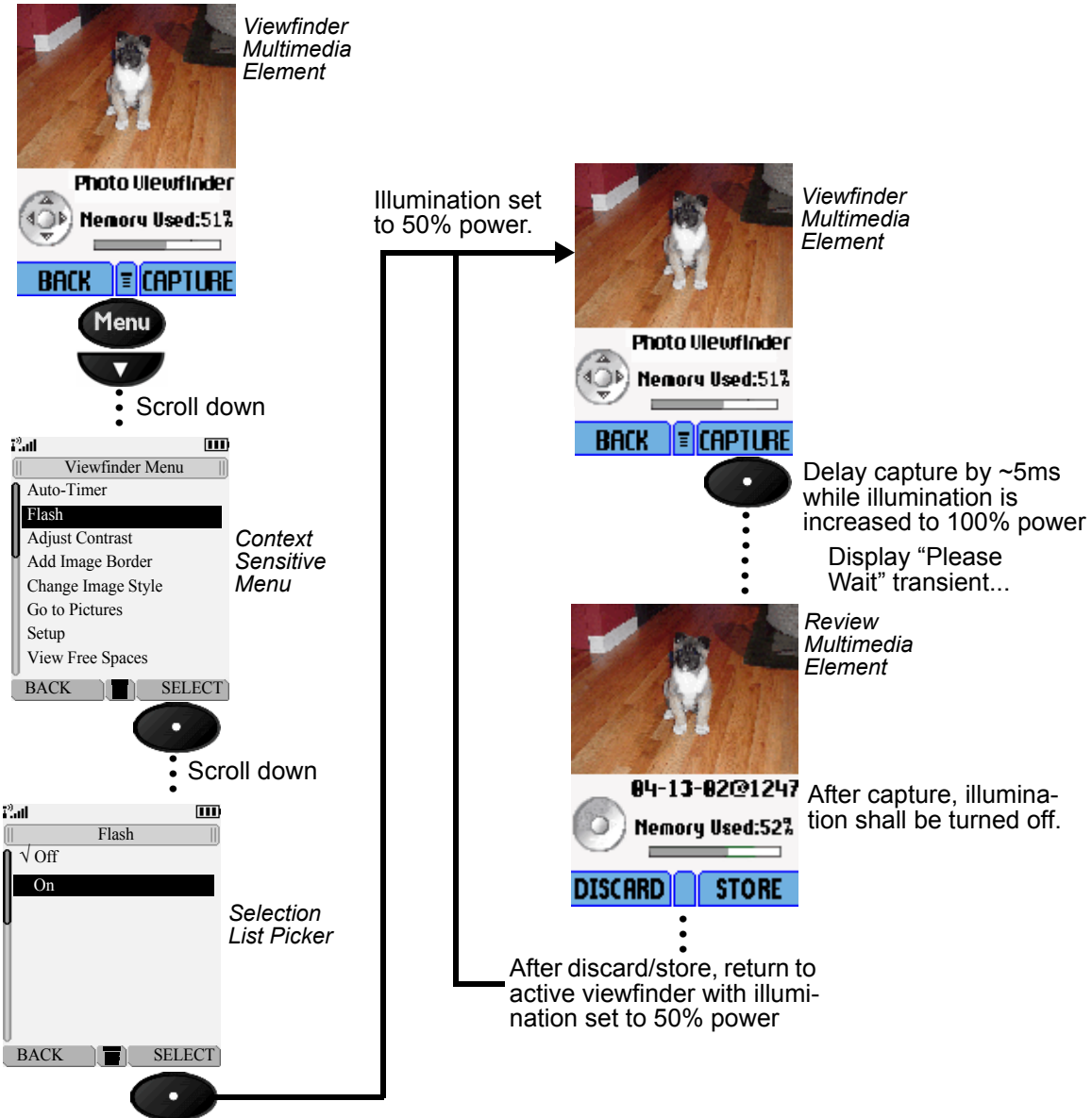


Figure 0-1: Taking Pictures with Flash

Rules:

- The flash settings shall be “Off” and “On”.
 - The default setting shall be “Off”. The default setting applies each time the user activates the camera viewfinder.
 - “Off” will disable the illumination for each picture

- “On” will turn on the illumination for each picture
- After setting flash to “On”, the user returns to the active viewfinder with the illumination set to 50% power.
 - The illumination shall remain on during the duration of the active viewfinder.
- Upon pressing CAPTURE (or other applicable capture button), the following sequence of events shall occur
 - The illumination shall be increased to 100% power in less than 5ms.
 - The normal picture capture process shall occur including display of the “Please Wait” notice. The picture shall be captured in the same length of time as a picture being captured without illumination.
 - The illumination shall be shut off.
 - The picture capture review screen shall be displayed (see Section 41.15.1.3 in the Synergy Functional Specification).
- After capturing, discarding, storing, sending, or setting a photo, the phone shall return to the active viewfinder.
 - If flash is set to “On”, then return to the viewfinder with the illumination set to 50% power.
- The flash setting shall revert to the “Off” once the user exits the active viewfinder.
- Products released P04.3 and after shall obey the rules above with the following exceptions:
 - The “Flash” prompt shall not take the user to a selection list picker.
 - The prompt shall be “Flash On” or “Flash Off” depending upon the current flash value.
 - If the flash is currently on the CSM prompt shall be “Flash Off”.
 - If the flash is currently off the CSM prompt shall be “Flash On”.
 - When “Flash On” or “Flash Off” is pressed the user shall be returned back to the active viewfinder.
- If the devices supports more than one image sensor the brightness adjustment shall be separate for each sensor.



The following section shall be merged with other equivalent MRS sections as one new section within the Pictures 1.2 Release (following 45.15.2 Pictures 1.1 Release) in the Media Center Chapter of the Synergy Functional Specification v1.4.4. The flash features are highlighted in **bold**.

0.0.2 Active Viewfinder Menu Items

The table below documents the menu items that will be accessible within the Picture Viewfinder Mode:

Menu Item	Picture Viewfinder Mode (BACK and CAPTURE softkeys)
Auto-Timer	Y
Flash	Y
Adjust Contrast	Y
Add Image Border	Y
Change Image Style	Y
Go to Pictures (takes phone to Pictures Summary List)	Y
Setup	Y
View Free Space	Y



8 Language Requirements *(REQUIRED)*

Translations for all languages will be necessary.

9 Prompt Requirements *(REQUIRED)*

List new prompts generated by this MRS:

- “Flash”, Section 0.0.1 “Taking Pictures with Flash”
- “Flash On”, Section 0.0.1 “Taking Pictures with Flash”
- “Flash Off”, Section 0.0.1 “Taking Pictures with Flash”

MA-specific/translation information: Not applicable

User manual impact: (yes/no): Yes

10 Hardware Requirements *(REQUIRED)*

An integrated LED and LED driver is required.

11 Interoperability Requirements *(REQUIRED)*

Not applicable.

12 Backward Compatibility/Flexing *(REQUIRED)*

The “Flash” feature is flexible. The default is flexed on.

13 Signatures

Name	Signature	Date (mm/dd/yy)

