

VISION 2020 「From Domestic No.1 to Global Top 10」

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# SiW Touch Driver

## Mode Change for ALT v1.6

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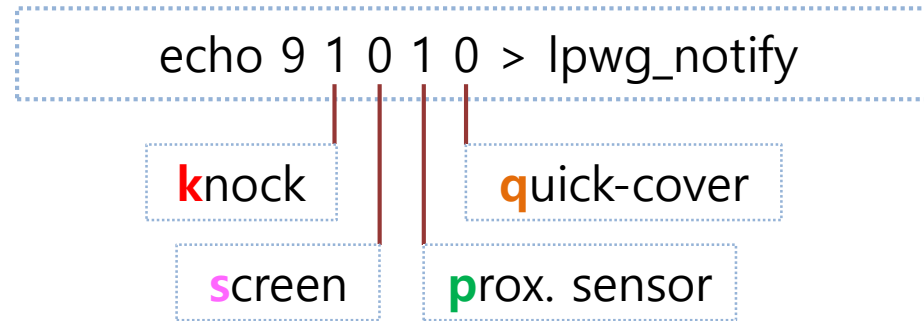
2018.12.17

R&D / Touch Team

# History

Version	Date	Description
1.0	2016.10.04	1 <sup>st</sup> release
1.1	2016.10.26	Update LPWG setup following new driver patch <a href="https://github.com/siw-touch/touch/commit/ff44061fbee55f8314d96522361b0eb5098957">https://github.com/siw-touch/touch/commit/ff44061fbee55f8314d96522361b0eb5098957</a>
1.2	2016.11.18	* Adjust table of contents 1. LPWG Setup 2. Font Config - Data Format 3. Mode Change U3 → U0 → U3 U3 → U2 U2 → U3 U2 → U0 → U2
1.3	2016.12.04	Update for 'U0 → Ux' case (related to reset notifier)
1.4	2016.12.07	Page 7. Exception : LG4946 doesn't support direct 'U2 ↔ U0'
1.5	2016.12.10	Add comments related to nReset for U0 → Ux case
1.6	2018.12.17	Page 8. Add LG496 'U2 ↔ U0' flow

# 1. LPWG Setup



	k	s	p	q	Status
U3	0	1	1	0	Screen ON, Prox FAR, Quick FAR
	0	1	0	0	Screen ON, Prox <b>NEAR</b> , Quick FAR
	0	1	1	1	Screen ON, Prox FAR, Quick <b>NEAR</b>
	0	1	0	1	Screen ON, Prox <b>NEAR</b> , Quick <b>NEAR</b>
U2/U0	1(0)	0	1	0	Knock ON(OFF), Prox FAR, Quick FAR
	1(0)	0	0	0	Knock ON(OFF), Prox <b>NEAR</b> , Quick FAR
	1(0)	0	1	1	Knock ON(OFF), Prox FAR, Quick <b>NEAR</b>
	1(0)	0	0	1	Knock ON(OFF), Prox <b>NEAR</b> , Quick <b>NEAR</b>

## 2. Font Config - Data Format

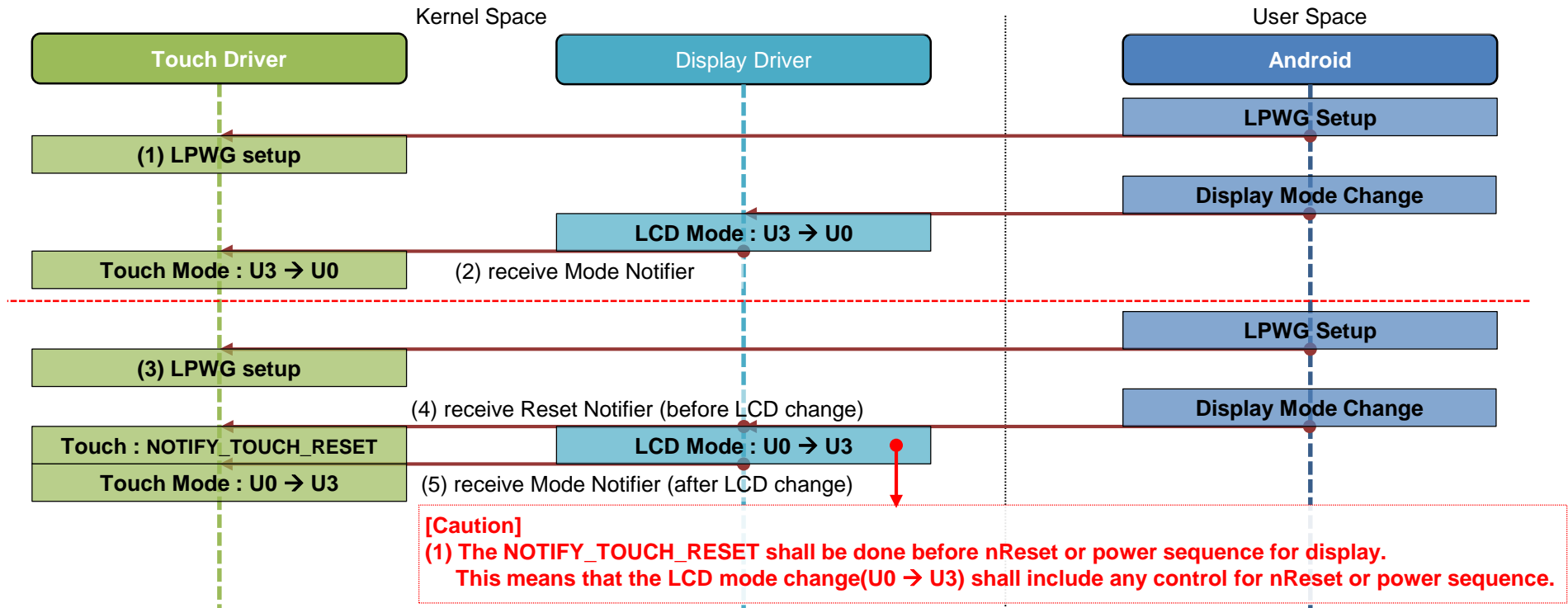
Structure	Elements	Note
config_time	u32 len (LSB)	sizeof(struct config_time)
	u32 rtc_cwhour	hour
	u32 rtc_cwmin	min
	u32 rtc_cwsec	sec
	u32 rtc_cwmilli	millisec

Structure	Elements	Note
config_pos	u32 len (LSB)	sizeof(struct config_pos)
	u32 watstartx	watch area start x
	u32 watendx	watch area end x
	u32 watstarty	watch area start y
	u32 watendy	watch area end y
	u32 h1x_pos	10 hour time start x
	u32 h10x_pos	1 hour time start x
	u32_m1x_pos	10 min time start x
	u32_m10x_pos	1 min time start x
	u32 clx_pos	colon start x

Structure	Elements	Note
config_effect	u32 len (LSB)	sizeof(struct config_effect)
	u32 watchon	watch-on (shall be zero)
	u32 h24_en	12/24 hour display mode
	u32 zero_disp	0' display in 10 hour area
	u32 clock_disp_type	Min or Sec mode selection
	u32 midnight_zero_en	Midnight display mode
	u32 blink_time	blinking period
	u32 bstartx	blinking area startx
	u32 bendx	blinking area endx

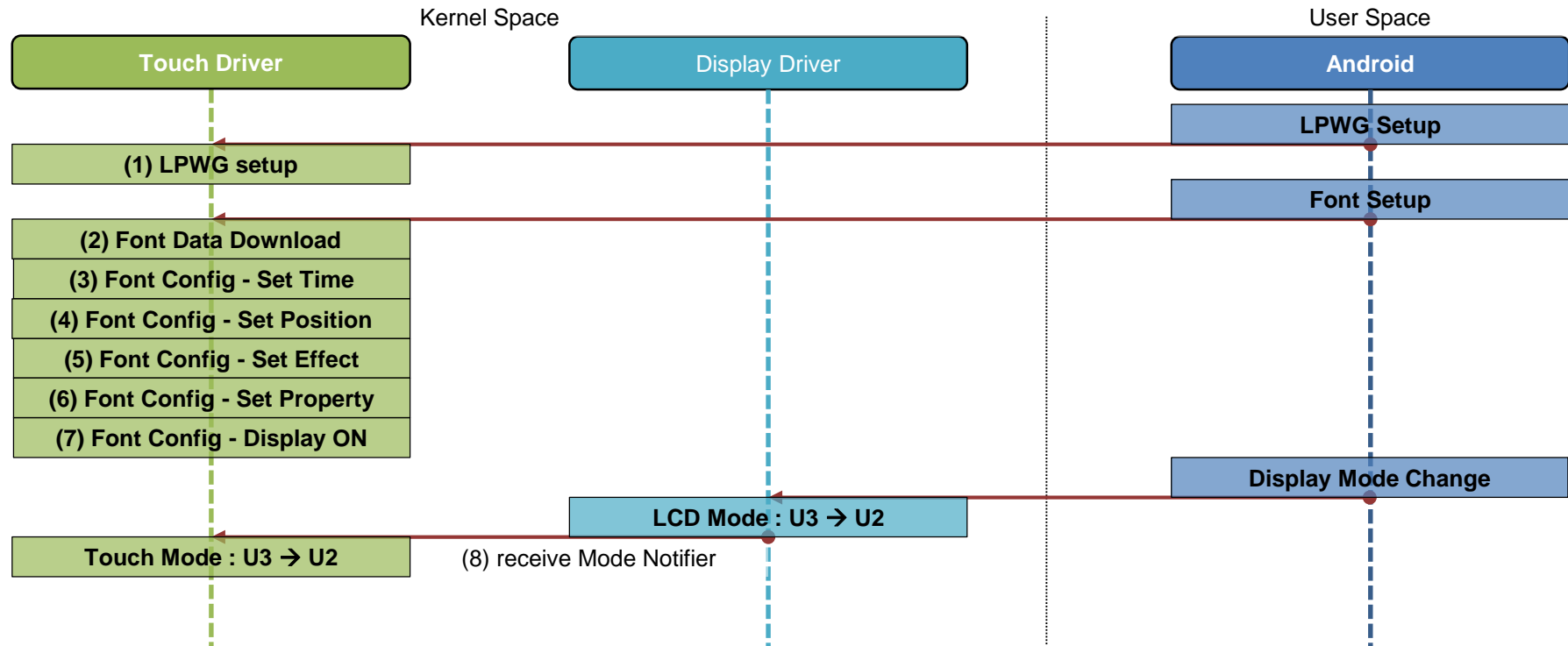
Structure	Elements	Note
config_prop	u32 len (LSB)	sizeof(struct config_prop)
	u32 max_num	LUT count ( $\leq 7$ )
	struct lut[7]	LUT table
lut	u32 rgb_blue (LSB)	blue ( $\leq 0xFF$ )
	u32 rgb_gree	green ( $\leq 0xFF$ )
	u32 rgb_r	red ( $\leq 0xFF$ )

### 3. Mode Change : U3 → U0 → U3



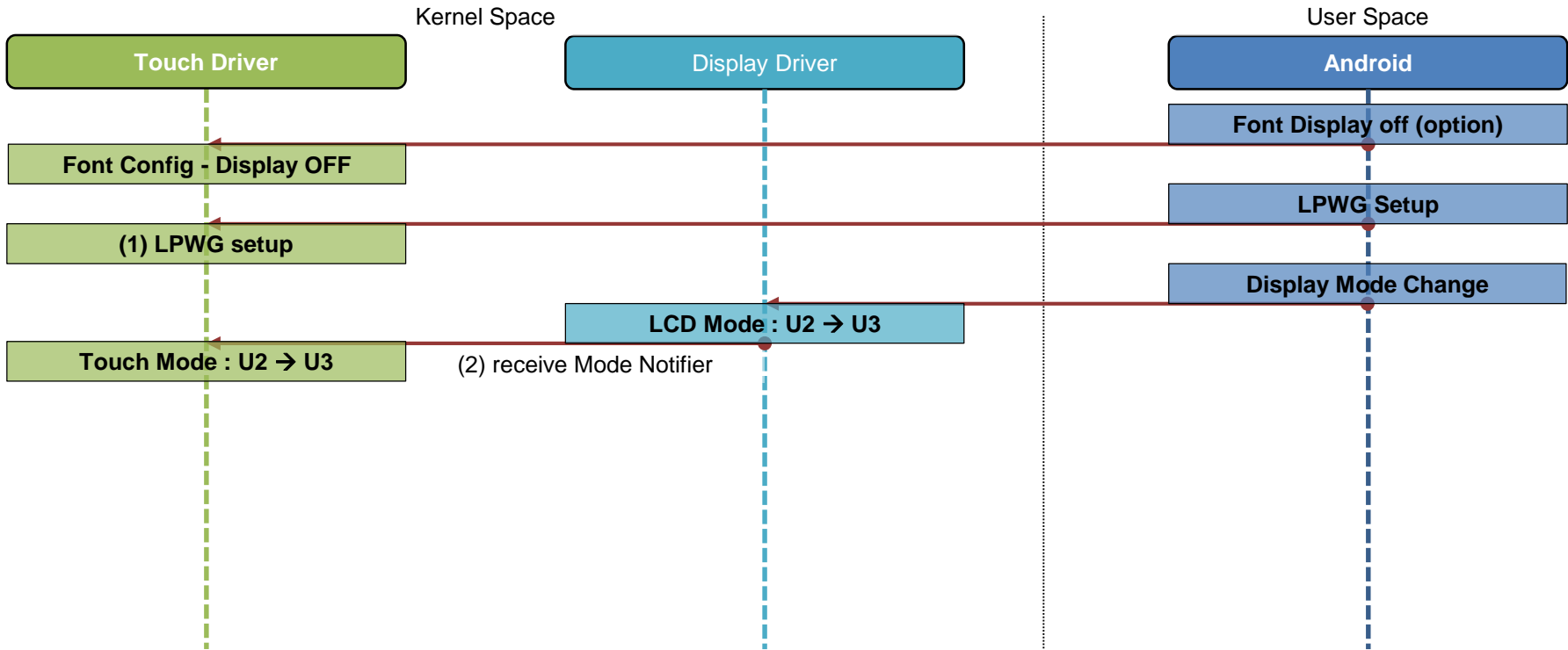
Step	Action	How to	Note
1	LPWG setup	echo 9 1 0 1 0 > .../siw_touch_input/lpwg_notify	sysfs access
2	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U0	inside LCD driver [See siw_touch_notify.h]
3	LPWG setup	echo 9 0 1 1 0 > .../siw_touch_input/lpwg_notify	sysfs access
4	receive Reset Notifier	siw_touch_notifier_call_chain(NOTIFY_TOUCH_RESET, NULL)	inside LCD driver [See siw_touch_notify.h]
5	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U3	

### 3. Mode Change : U3 → U2



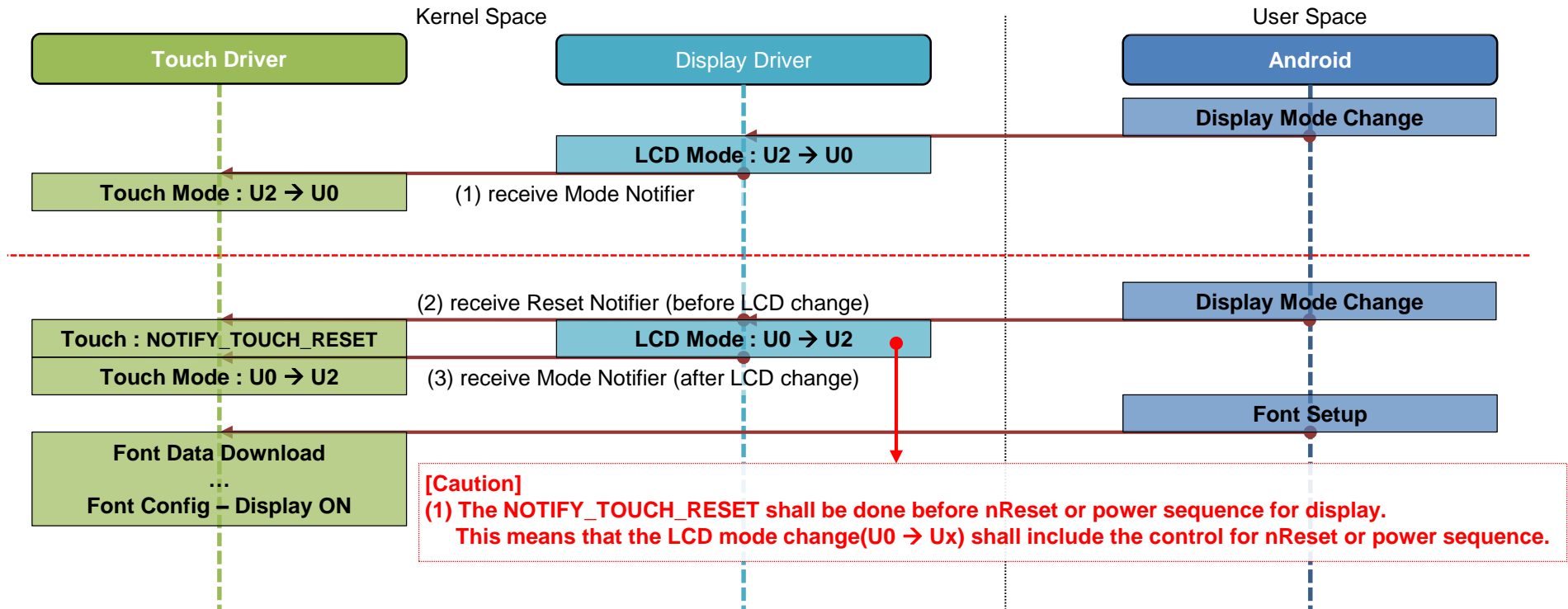
Step	Action	How to	Note
1	LPWG setup	echo 9 1 0 1 0 > ../siw_touch_input/lpwg_notify	sysfs access
2	Font Data Download	write 'font file data' to ../siw_ext_watch/config_fontdata	sysfs access
3	Font Config - Set Time	write 'config_time' to ../siw_ext_watch/config_timesync	sysfs access
4	Font Config - Set Position	write 'config_pos' to ../siw_ext_watch/config_fontposition	sysfs access
5	Font Config - Set Effect	write 'config_effect' to ../siw_ext_watch/config_fonteffect	sysfs access
6	Font Config - Set Property	write 'config_prop' to ../siw_ext_watch/config_fontproperty	sysfs access
7	Font Config - Display ON	write 0x1 to ../siw_ext_watch/config_fontonoff	sysfs access
8	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U2	inside LCD driver [See siw_touch_notify.h]

# 3. Mode Change : U2 → U3



Step	Action	How to	Note
(opt)	Font Config - Display OFF	write 0x0 to .../siw_ext_watch/config_fontonoff	sysfs access
1	LPWG setup	echo 9 0 1 1 0 > .../siw_touch_input/lpwg_notify	sysfs access
2	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U3	nside LCD driver [See siw_touch_notify.h]

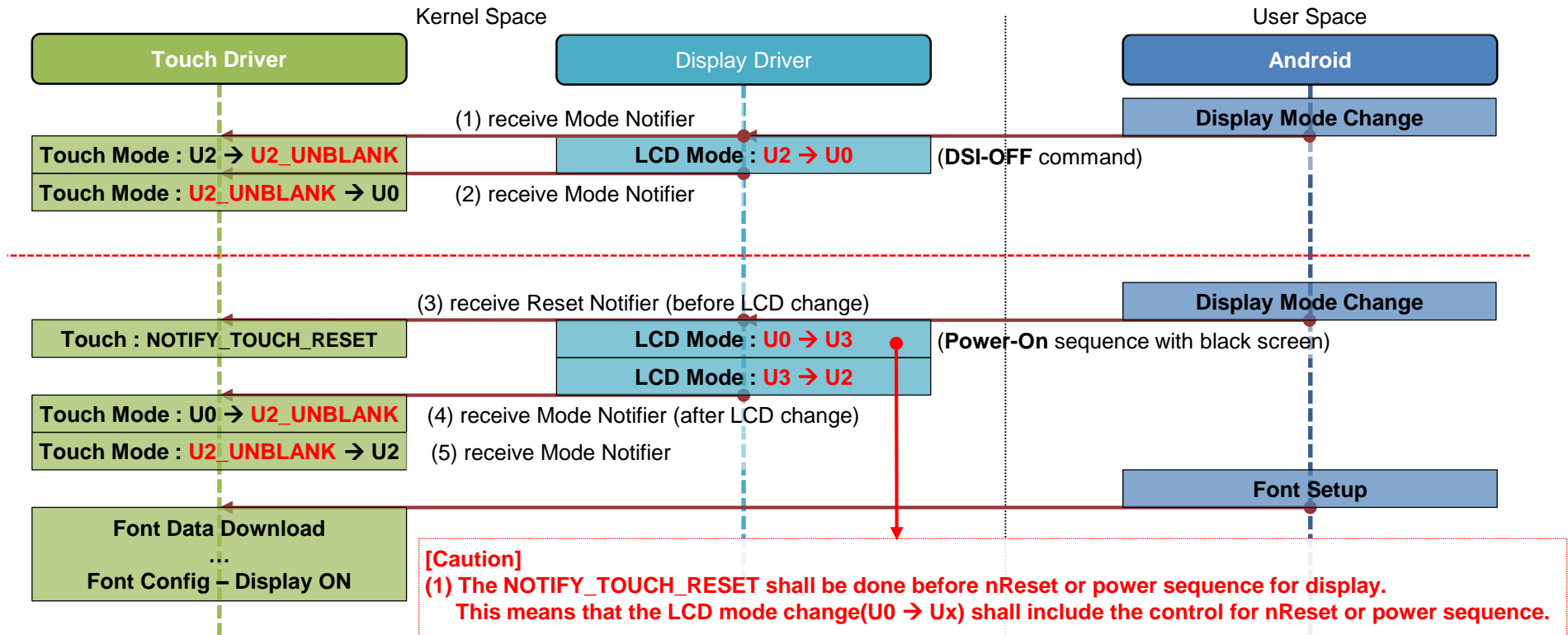
### 3. Mode Change : U2 → U0 → U2



Step	Action	How to	Note
1	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U0	inside LCD driver [See siw_touch_notify.h]
2	receive Reset Notifier	siw_touch_notifier_call_chain(NOTIFY_TOUCH_RESET, NULL)	
3	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U2	
4	Font Setup	Same as 'U3 → U2' case	



### 3. Mode Change : U2 → U0 → U2 (for LG4946)



Step	Action	How to	Note
1	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U2_UNBLANK	inside LCD driver [See siw_touch_notify.h]
2	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U0	
3	receive Reset Notifier	siw_touch_notifier_call_chain(NOTIFY_TOUCH_RESET, NULL)	
4	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U2_UNBLANK	
5	receive Mode Notifier	siw_touch_notifier_call_chain(LCD_EVENT_LCD_MODE, (void *)&panel_mode) int panel_mode = LCD_EVENT_LCD_MODE_U2	
6	Font Setup	Same as 'U3 → U2' case	