

DANAI  
LCD View Angle Change Report

# AGENDA

- *Internal Issue description*
- *Root cause analysis*
- *Improve actions*
- *Component change list*
- *Suggestions for F4L & LE & FFW*

# INTERNAL ISSUE DESCRIPTION

- TCL internal Test reported some special angle displayed show white screen causing end user poor experience.

# ROOT CAUSE ANALYZE

- After reviewing LCD Polarizer spec, we found current LCD polarizer used for DANAI is Conventional LCD. Detail view angle degree listed as below:

View angle (Degree)	L/R/U/D: 40/40/60/20
---------------------	----------------------

# IMPROVE ACTION TO IMPROVE CUSTOMER EXPERIENCE

- Change LCD Polarizer to add wide view angle (WV Film) “L/R/U/D: 65/65/60/50”.

Current DANAI with viewing angle:

View angle (Degree)	L/R/U/D: 40/40/60/20
---------------------	----------------------

Added WV Film (Enhanced Viewing Angle)

View angle (Degree)	L/R/U/D: 65/65/60/50
---------------------	----------------------

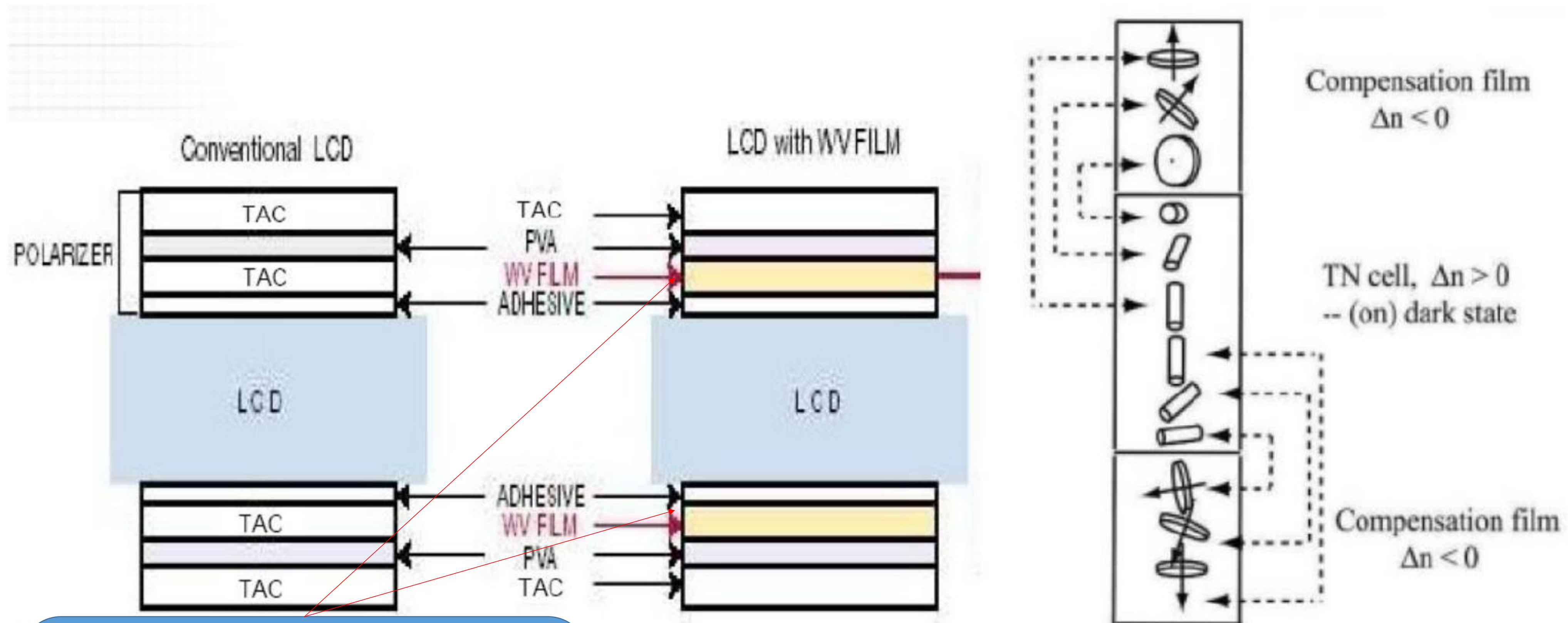
L: Left  
R: Right  
U: Up  
D: Down

# COMPONENT CHANGE - OVERVIEW

Item	Component	Comments
1	LCD Polarizer (WV Film)	Change viewing angle to wide view angle, thickness increase by 0.15mm

# COMPONENT CHANGE – ADDED WV FILM

TAC: Triacety Cellulose  
PVA: Polyvinyl Alcohol

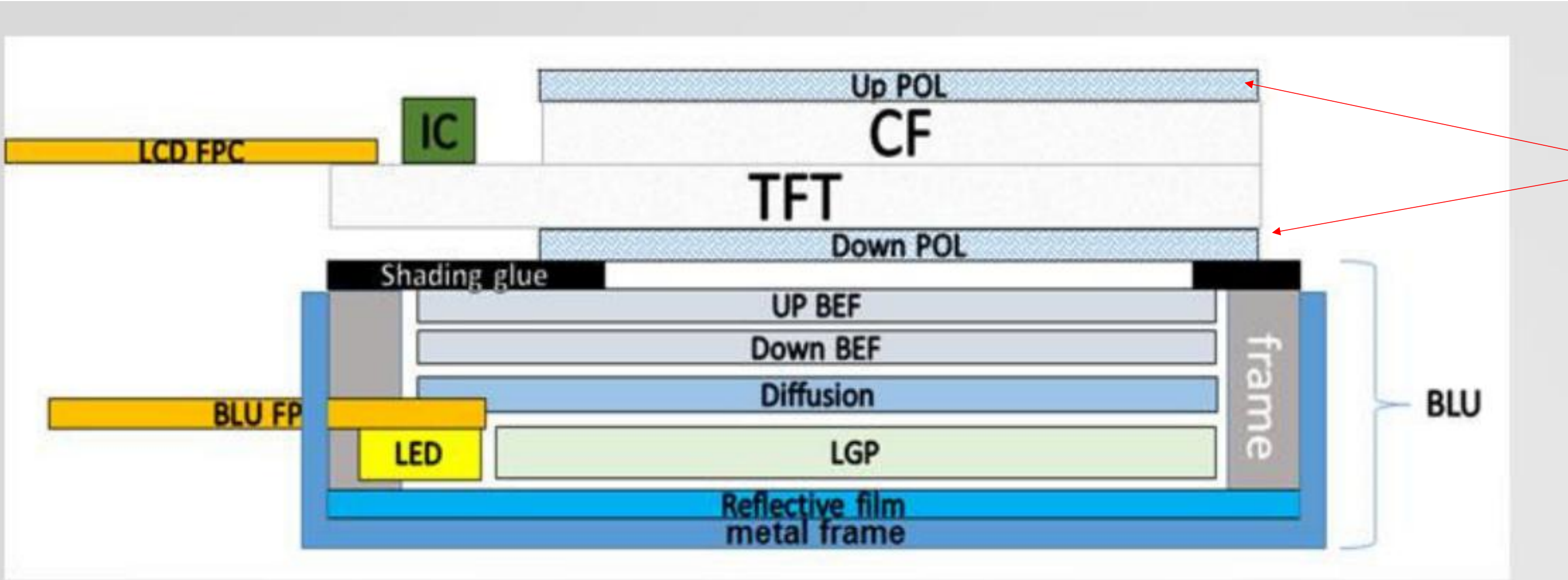


1, WV Film = Wide View Film  
2, WV Film can compensate the view angle via complicated algorithm by making view angle wide, which can make us catch sight of same shape/object via different angle.

The structure of an on-state TN-LCD with discotic negative birefringence films

# COMPONENT CHANGE LIST – ADDED WV FILM

BLU: Backlight Unit  
 BEF: Brightness Enhancement film  
 LGP: Light Guide Plate



WV film will be added (up/down pol) for DANAI based on current conventional (narrow view angle) LCD.

Material details	Conventional solution thickness	Wide viewing angle solution thickness
Up POL	0.15	0.215
CF	0.4	0.4
TFT	0.4	0.4
Down POL	0.13	0.215
BLU Total thickness	0.92	0.92
Total thickness	2.00	2.15

LCD thickness changed after Polarizer (WV film) added.

WV Film can compensate the view angle via algorithm by making view angle wide, which can make user catch sight of same shape/object via different angle.





## HW change list – Aluminum alloy

- Aluminum alloy on front casing increase 0.15mm in green parts.

