

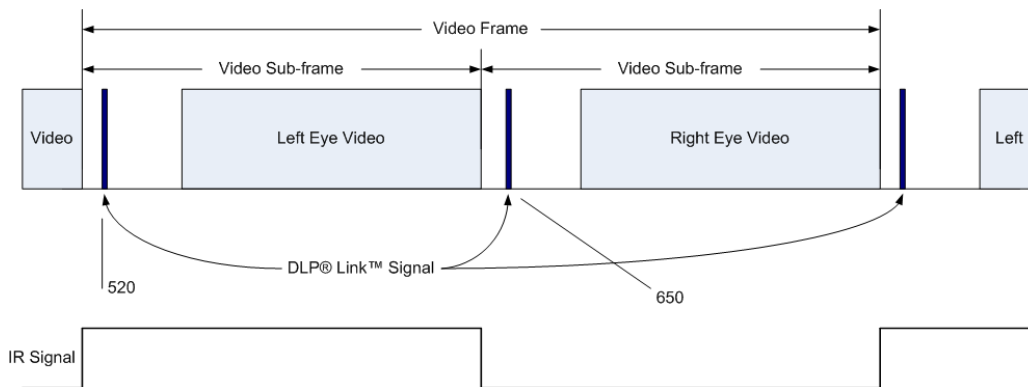
DLP® Link™

January 2023

3D – DLP Link

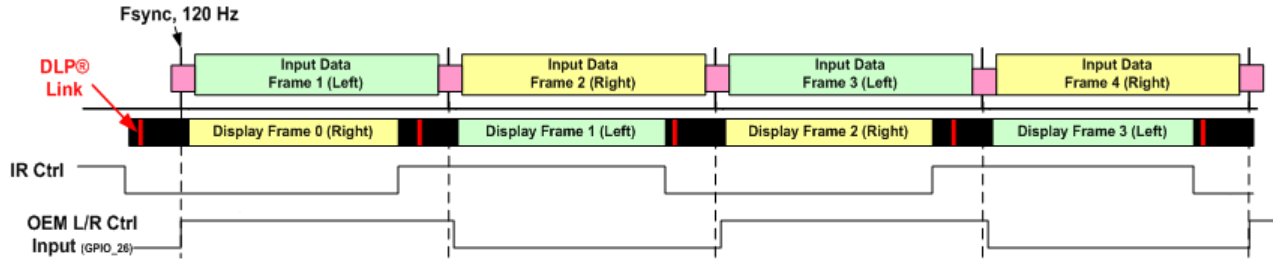
- Most existing non-DLP 3D glasses on the market require an external emitter box, usually IR, to wirelessly synchronize the glasses to the display.
- DLP Link enables glasses to be synchronizes wirelessly without the need for external emitter box.
- DLP Link provides a way to synchronize 3D glasses by filtering and decoding embedded white light data from the DMD device.

3D – DLP Link Video Frame



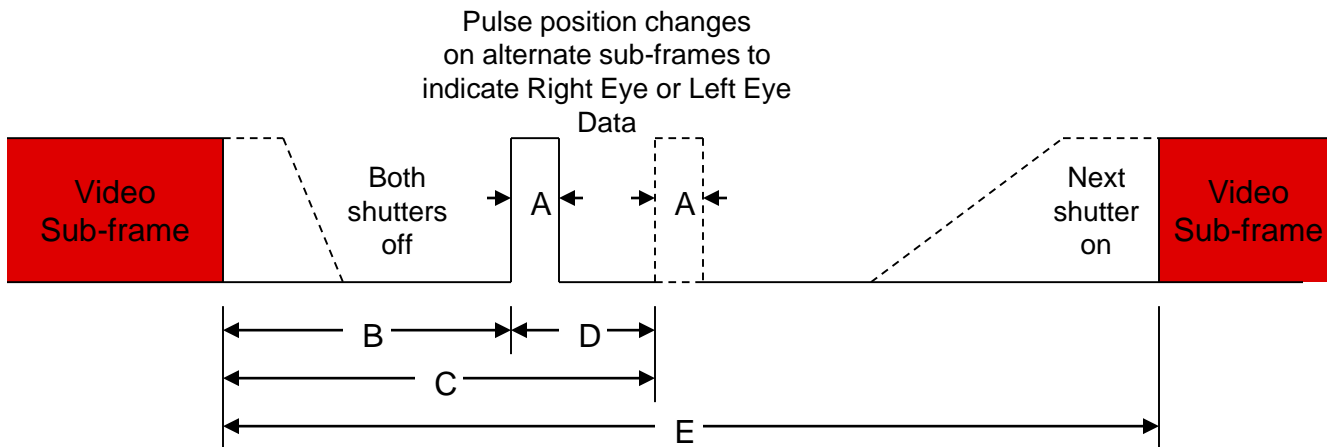
- The DLP Link Signal is a pulse of light that occurs one time per sub-frame during dark time.
 - Dark time is used to determine which shutter on the 3D glasses shall be enabled.
 - Dark time is used to allow the shutter on the 3D glasses to open.
- The pulse width of the DLP Link Signal is the same per sub-frame.
- The start of the DLP Link Signal from the beginning of the dark time is different per sub-frame.
 - The Left Eye and Right Eye information is based on the location of the DLP Link Signal during the dark time between video sub-frames

Left/Right Frame Detection Method



- Signal Conventions Assumed:
 - IR Control output; High is Left Data, Low is Right Data
 - OEM L/R Control Input; High is Left Data being input, Low is Right Data being input
 - SW expects GPIO to be low when displaying Frame 1
 - Ideally GPIO is aligned with Vsync
 - Must be stable after rising edge of VSync and remain stable for a min 3 mS
- SW samples GPIO once per CW revolution.

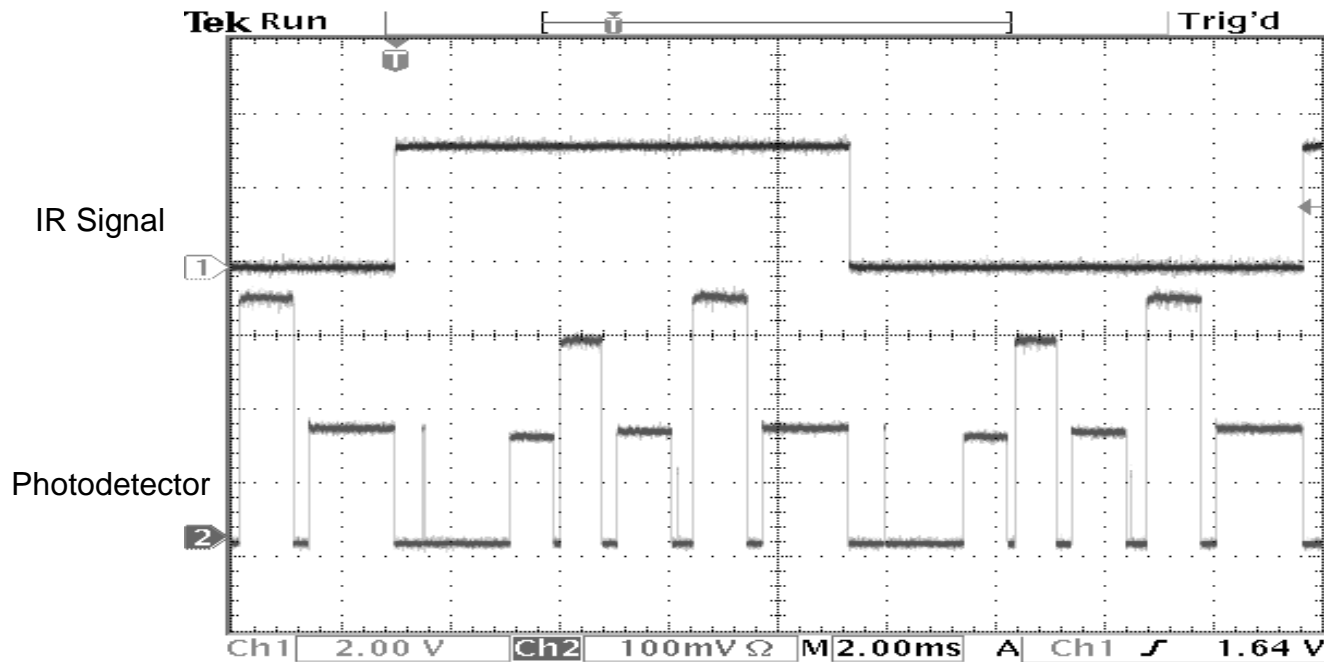
White-Light Signal Description



Frame rate (Hz)	Sub-frame period (ms)	A (us)	B (us)	C (us)	D (us)	E (ms)
62	8.0645	25	500	628	128	2.000
60	8.3333	26	517	649	132	2.067
50	10.000	31	620	779	159	2.480

- The period between DLPLink pulses alternates between the sub-frame period + D and the sub-frame period – D, where D is the delta period.
- The period between odd or even pairs of pulses is equal to the frame period since that is the sum of a long and a short interpulse period.

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