

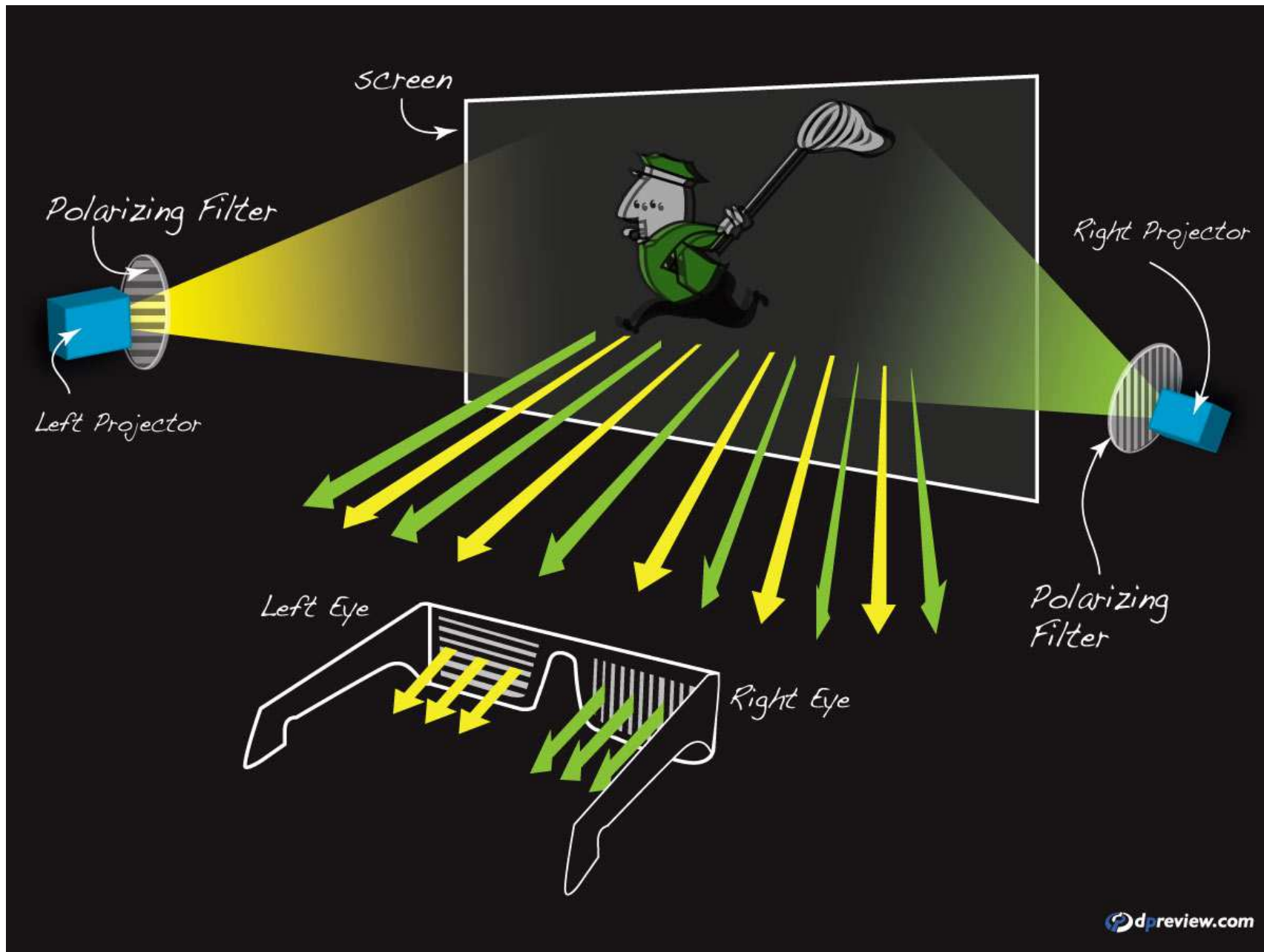
Računarska elektronika

LCD

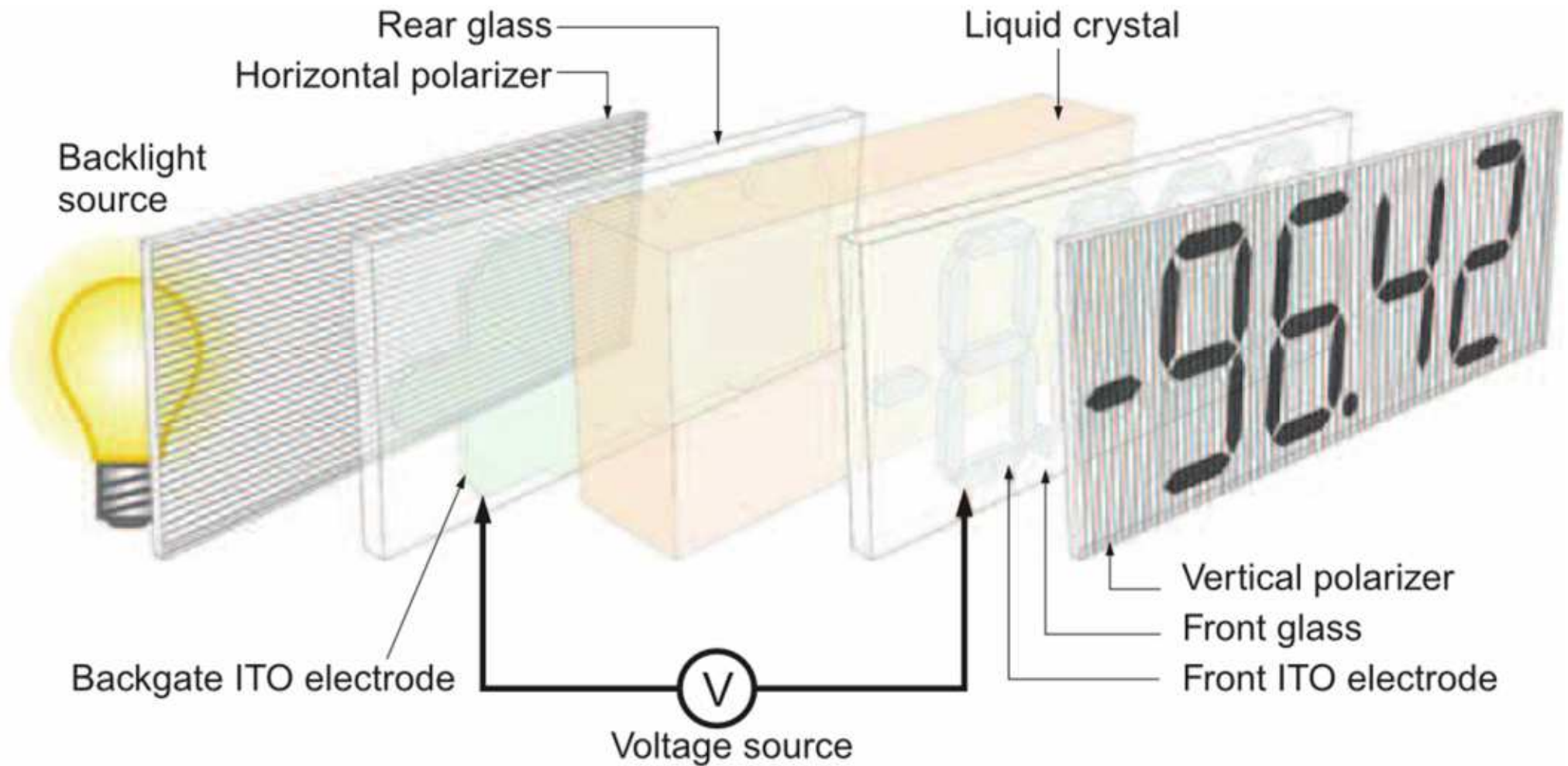
Naočari?



3D Bioskop

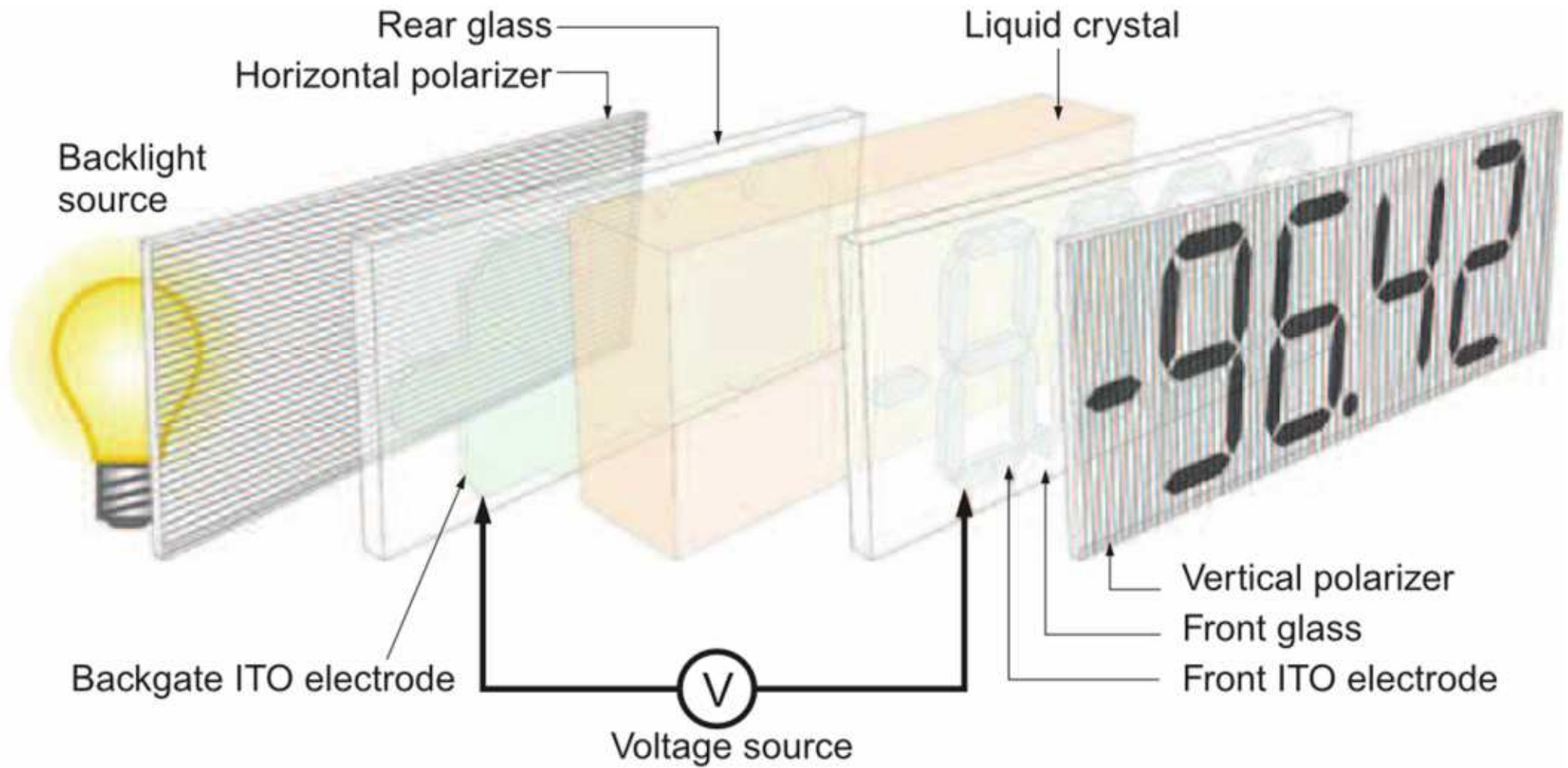


Struktura LCD-a



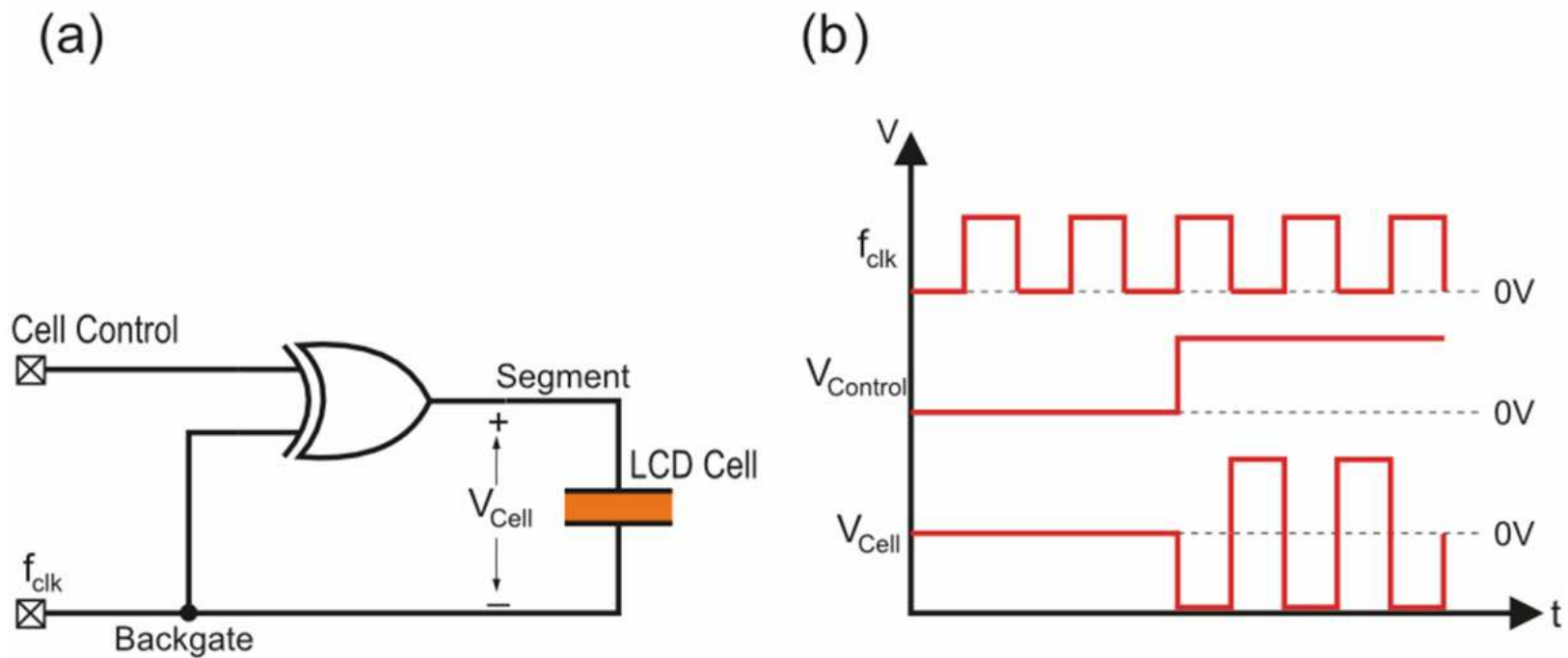
<https://www.youtube.com/watch?v=0B79dGR19Tg>

Struktura LCD-a



Drajversko kolo

Problem sa DC naponom i rešenje:

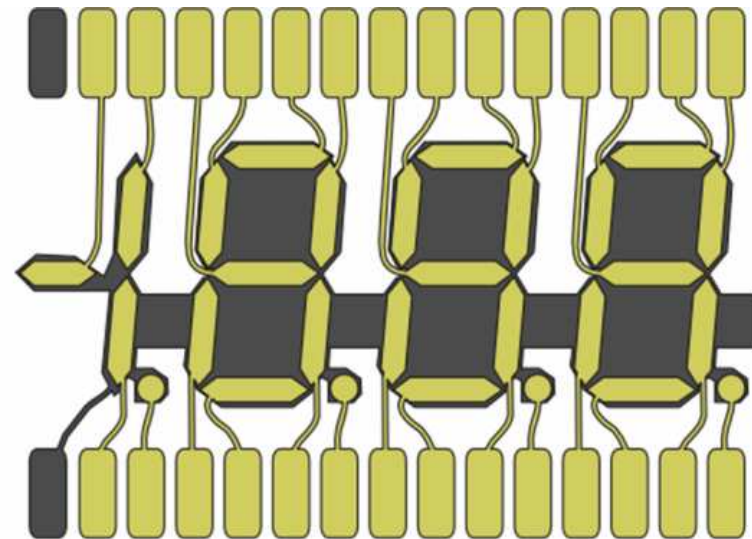


- Direktno
- Multipleksirano
- Aktivnom matricom

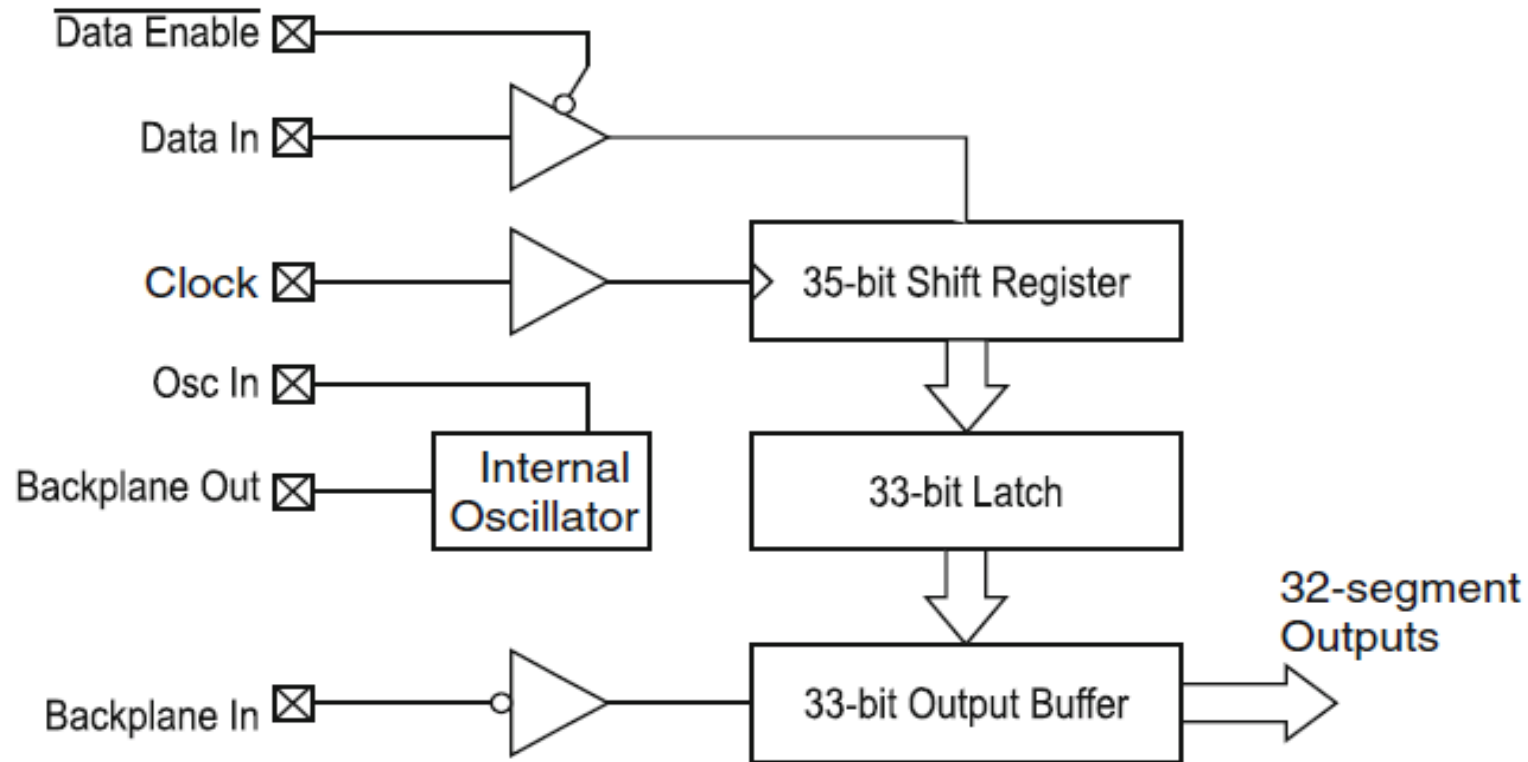
(a)



(b)

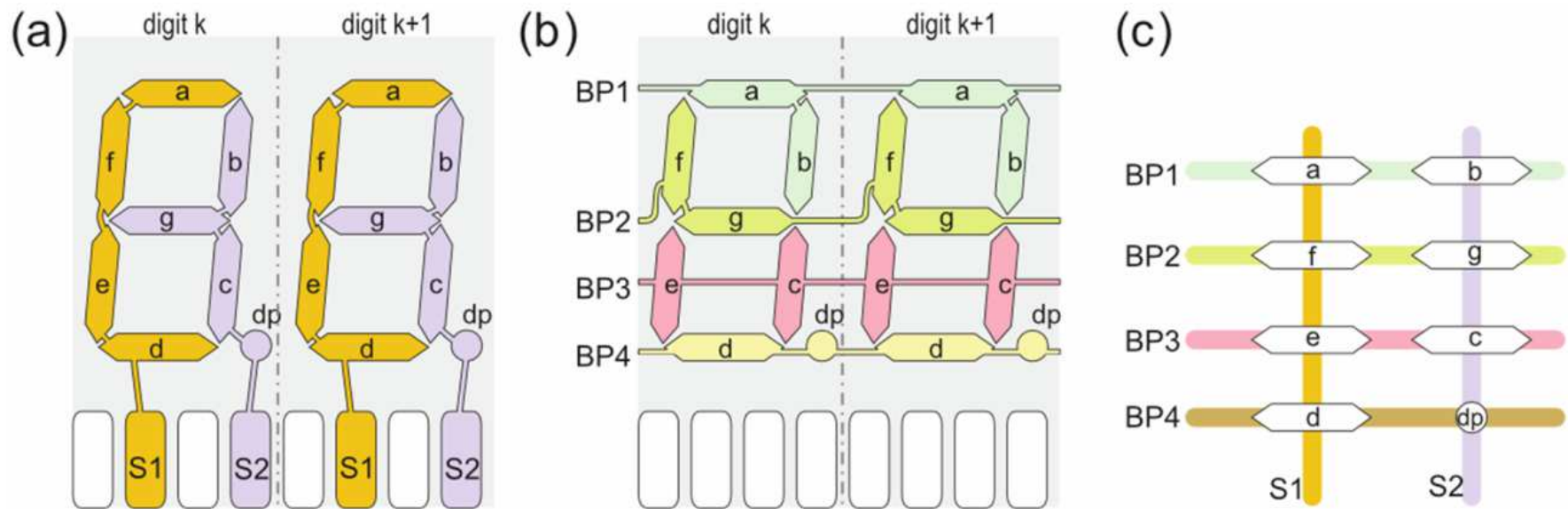


Blok dijagram MM5452 direktnog drajvera



- Matrična struktura (segmenti-kolone, pozadina(BPx)-redovi)
- Nereagovanje na vršnu vrednost ili maksimalnu već na RMS AC vrednost radi kontrole kontrasta
- Uslov za aktivaciju segmenta $|V_{BPi} - V_{Sj}| \geq |V_{Ton}|$
- Uslov za deaktivaciju segmenta $|V_{BPi} - V_{Sj}| \leq |V_{Toff}|$

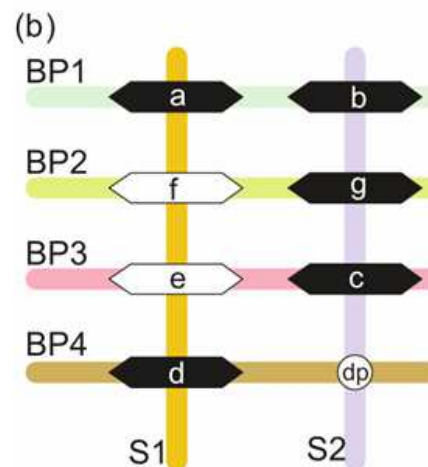
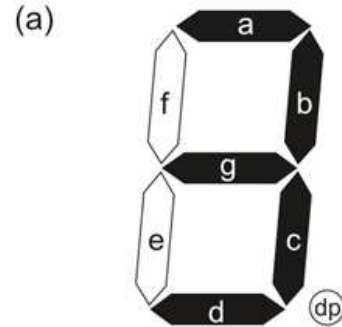
Matrična struktura



Za npr. 3.5 cifarni LCD je potrebno
11 umesto 28 pinova koliko je
potrebno za direktno upravljanje

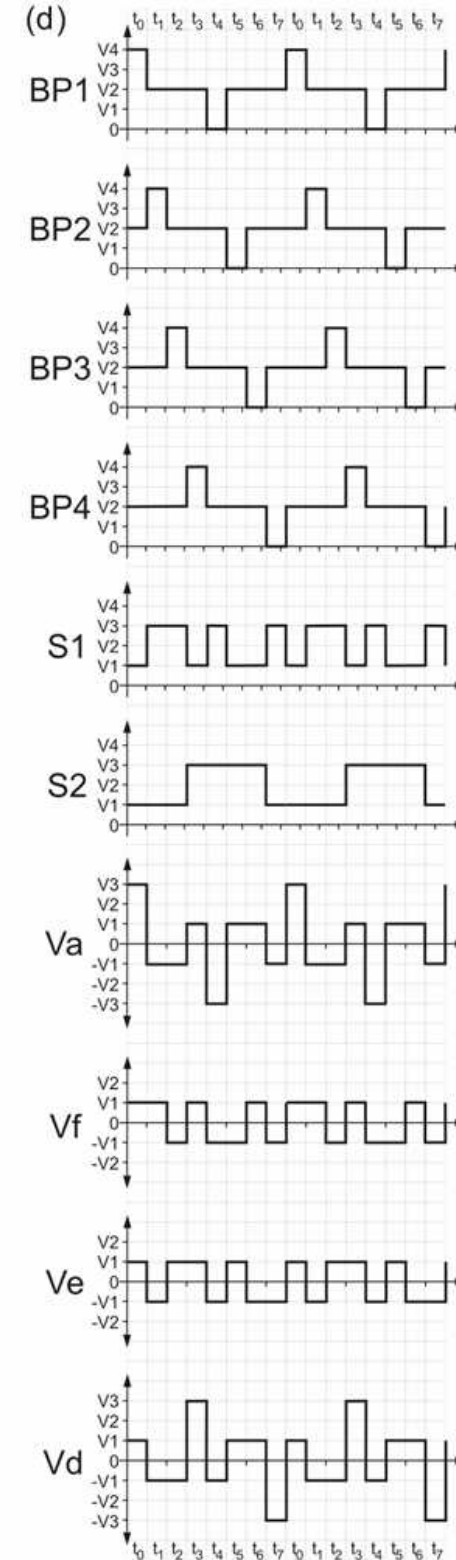
Dodatna objašnjenja:

- 4 naponska nivoa BPa
- 2 impulsa (prvo +, pa -)
- Konačni napon segmenta se dobija kao razlika BP i S
- Frejm traje $2 \times 4 = 8$
- 1 znači max, 0 znači min, - znači neki analogni napon

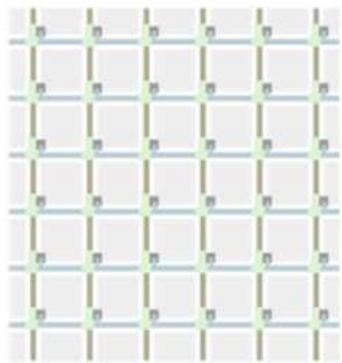


(c)

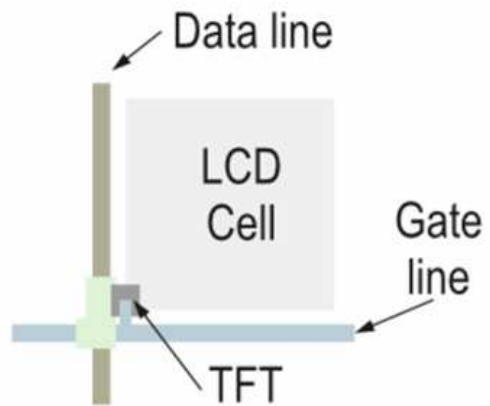
	t_0	t_1	t_2	t_3	t_4	t_5	t_6	t_7
BP1	1	-	-	-	0	-	-	-
BP2	-	1	-	-	-	0	-	-
BP3	-	-	1	-	-	-	0	-
BP4	-	-	-	1	-	-	-	0
S1	0	1	1	0	1	0	0	1
S2	0	0	0	1	1	1	1	0



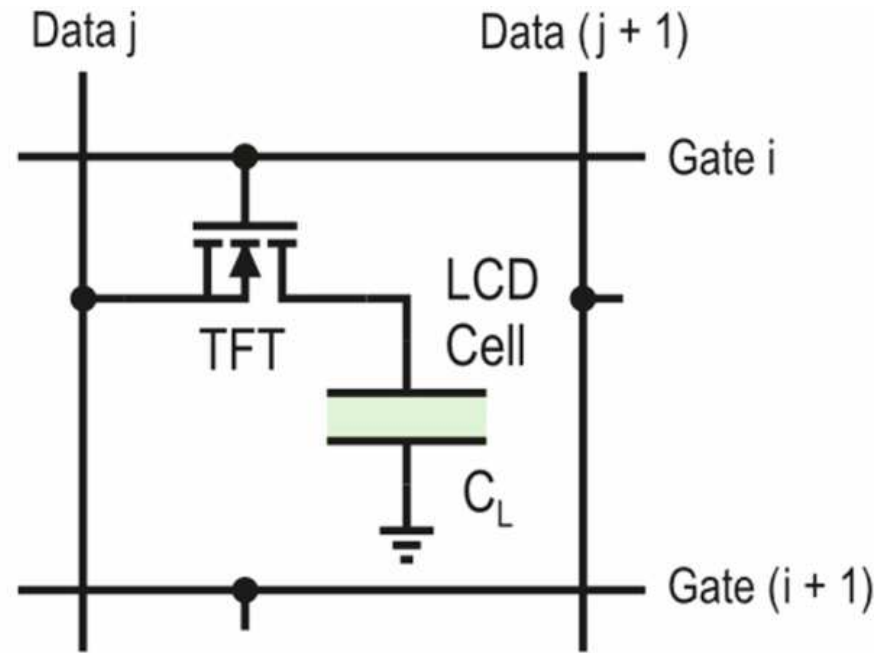
Aktivna matrica



(a)



(b)



(c)

TFT LCD

