Ordering number : ENN6751

LCD Module

ALP022AGX

Low-Temperature Polysilicon 0.55-inch TFT LCD Module

Overview

This 0.55 inch low temperature poly- silicon TFT-LCD module consists of LCD panel and White LED backlight. This is suitable for digital video camera or for digital still camera as view finder.

Features

- Diagonal 1.375cm (0.55inch) display size.
- 521 × 218 = 113,578 dots.
- RGB delta color arrangement.
- Operating temperature (Panel) is -10 to +60°C. Ambient temperature during storage is -20 to +70°C.
- Slim design, light weight and narrow frame. (t=0.7mm glass)
- Builds in level shifter circuit.
- Conform to NTSC, PAL when using recommended IC : LV4135W,LV4137W, (LV4139W : Under development).
- Glare polarizer.
- Builds in White LED backlight unit. (No inverter unit.)
- Panel power consumption is Typ.30mW at NTSC. Back-light power consumption is 105mW. (reference)
- Display surface luminance is typ 150cd/m2.

Specifications

Item	Specifications	Unit	Remarks
Dot count (H) × (V)	521 × 218	dot	
Effective display dimensions (H) × (V)	11.26 × 8.37	mm	
Display size (diagonal)	1.375 (0.55inch)	cm	
Dot pitch (H) × (V)	0.0216 × 0.0384	mm	
Color arrangement	RGB Delta	-	
External Dimensions (W) × (H) × (D)	TYP 18.0 × 17.8 × 5.8	mm	Note1
Weight	Approx. 3	g	

*Note1: Excluding flexible cable and protrusions.

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Absolute Maximum Ratings at VSS=0V

Item	Symbol	Ratings	Unit
H driver power supply voltage	HVDD	-1.0 to +14	V
V driver power supply voltage	VVDD	-1.0 to +14	V
Common electrode voltage	VCOM	-1.0 to +14	V
Driving direction signal voltage	CSH, CSV	-1.0 to +14	V
H driver input voltage	STH, XSTH, CKH1, CKH2	-1.0 to +14	V
V driver / precharge data input voltage	STV, XSTV, CKV1, CKV2, ENB, XENB, PCG, XPCG	-1.0 to +14	V
Video / precharge data input voltage	VG, VR, VB, VPCD	-1.0 to +13	V
Operating temperature (panel)	Topr	-10 to +60	°C
Storage temperature	Tstg	-20 to +70	°C

Operating Conditions

Power supply voltage

HVDD LV4135W LV4137W : 12.0V ± 0.3V

VVDD LV4135W LV4137W : 12.0V ± 0.3V

VSS LV4135W LV4137W : 0V

Item			Symbol	MIN	TYP	MAX	Unit
H driver input voltage		Low	VHIL	-0.3	0.0	0.3	V
		High	VHIH	2.5	3.0	4.0	V
V driver input voltage		Low	VVIL	-0.3	0.0	0.3	V
		High	VVIH	2.5	3.0	4.0	V
CSV, CSH		Low	VSIL	-0.3	0.0	0.3	V
		High	VSIH	11.5	VDD	VDD	V
Video signal center voltage	LV4135W, LV4137W		VVC	5.3	5.5	5.7	V
Video signal input voltage range *1			VG, VR, VB	VVC-3.5	-	VVC+3.5	V
Common electrode voltage*2			VCOM	(VVC-0.2)-0.2	(VVC-0.2)	(VVC-0.2)+0.2	V
Precharge data signal *1			VPCD	VVC±1.5	VVC±2.0	VVC±2.5	V

*1 Video signal and precharge data signal shall be input symmetrically around VVC.

*2 Set common electrode voltage to the optimum voltage.

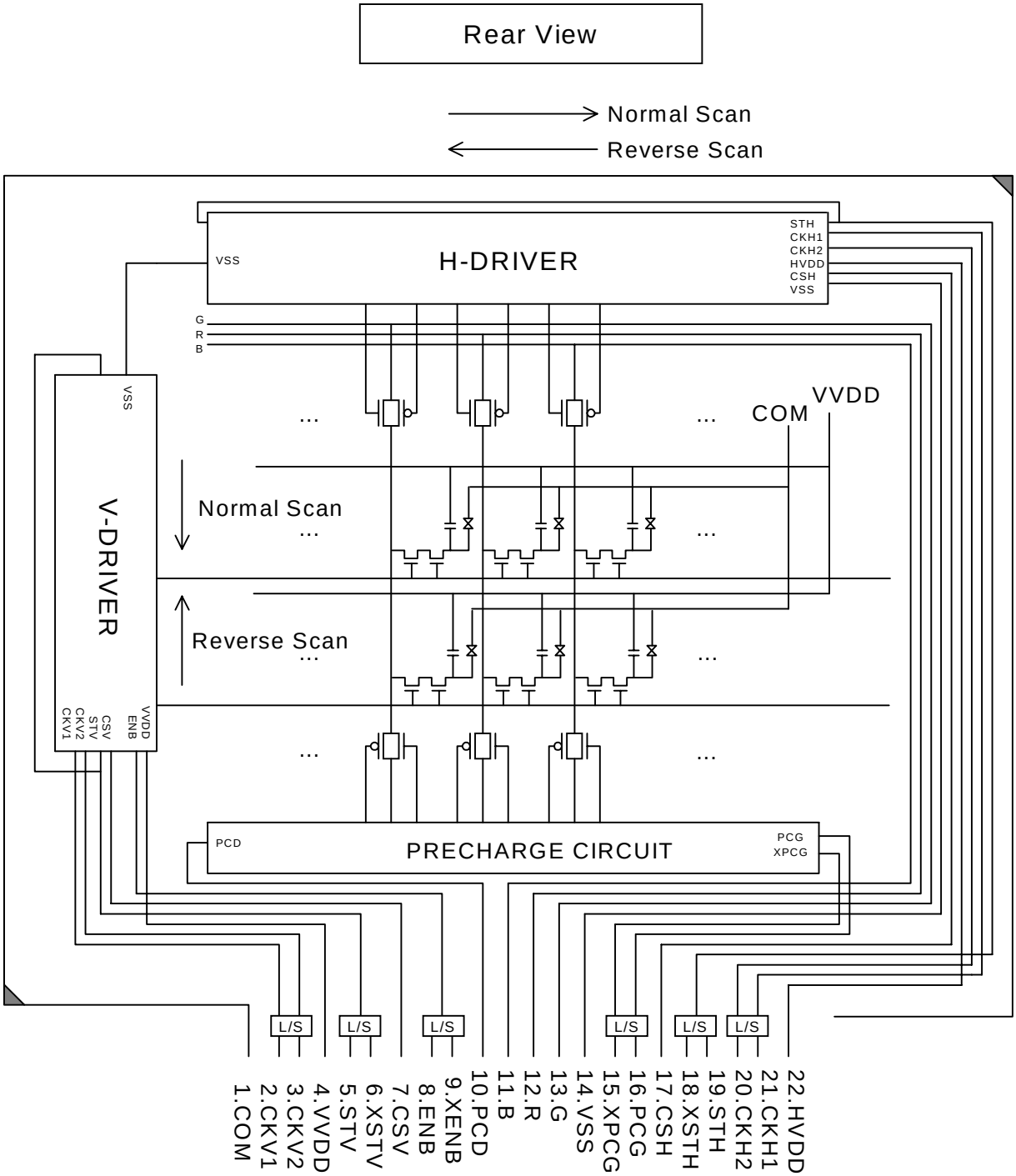
Optical Specifications

Item	Symbol	Condition	MIN	TYP	MAX	Unit
Contrast ratio	CR	25°C	-	100	-	-
Viewing angle range	θT θB θL θR	CR >= 10	-	15 35 45 45	-	deg

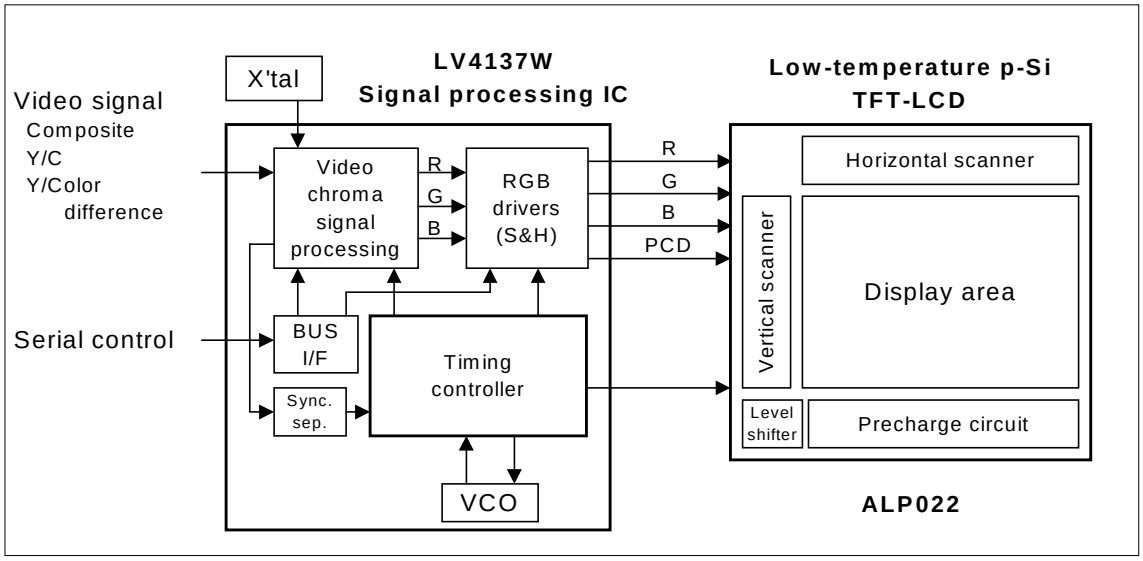
Pin Function

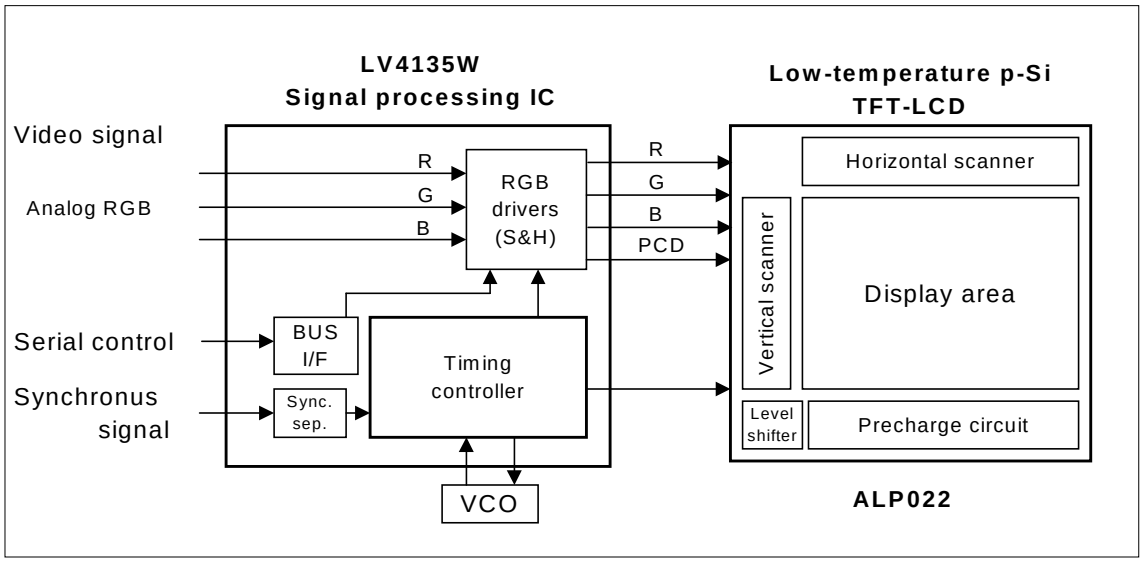
Pin No	Symbol	Function
1	COM	Common electrode voltage
2	CKV1	V clock 1
3	CKV2	V clock 2
4	VVDD	VDD for V drive
5	STV	V start signal
6	XSTV	Inverted signal of STV
7	CSV	Up / down inverse control signal (H : Normal scan, L : Reverse scan)
8	ENB	Enable signal
9	XENB	Inverted signal of ENB
10	PCD	Precharge data signal
11	B	Video signal (B)
12	R	Video signal (R)
13	G	Video signal (G)
14	VSS	VSS for V and H drive
15	XPCG	Inverted signal of PCG
16	PCG	Precharge gate signal
17	CSH	Right / left inverse control signal (H : Normal scan, L : Reverse scan)
18	XSTH	Inverted signal of STH
19	STH	H start signal
20	CKH2	H clock 2
21	CKH1	H clock 1
22	HVDD	VDD for H drive

Block Diagram

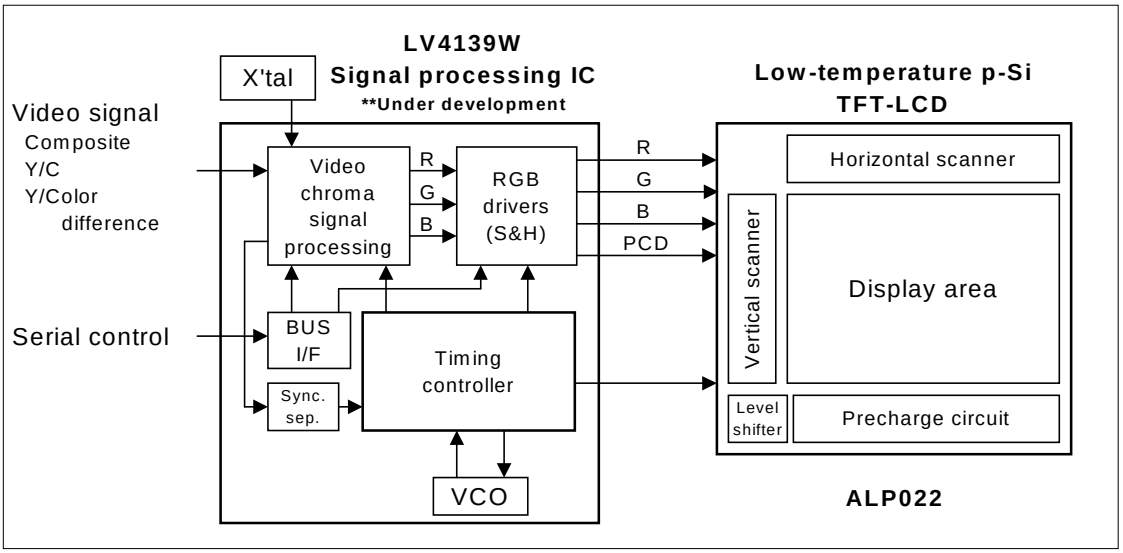


System Configuration

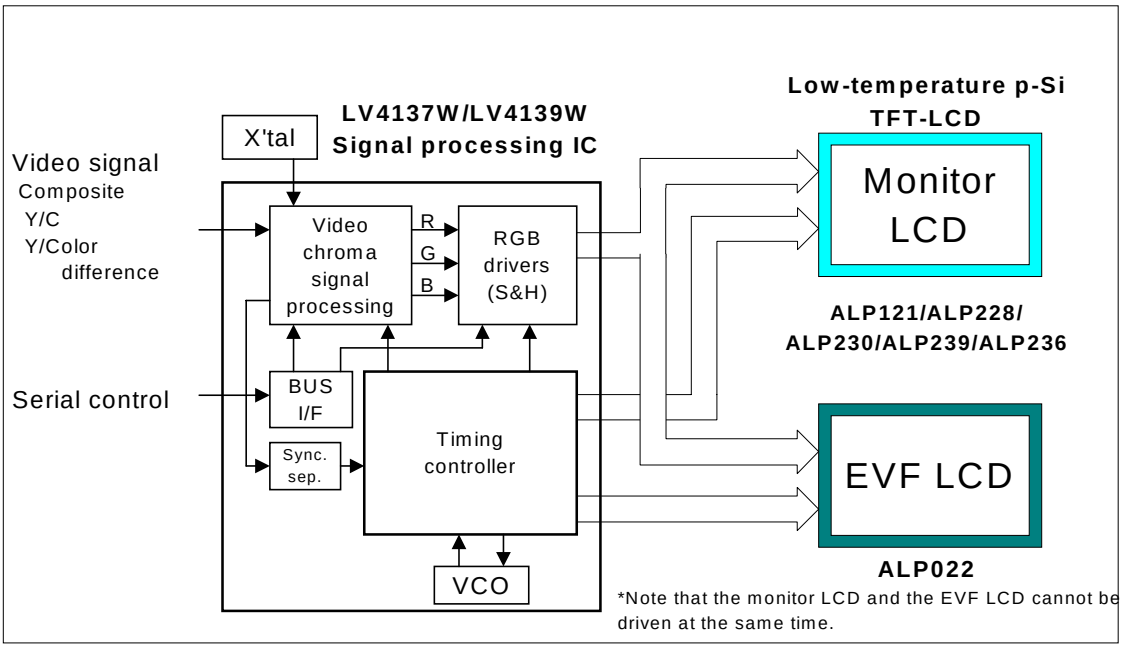




System Configuration

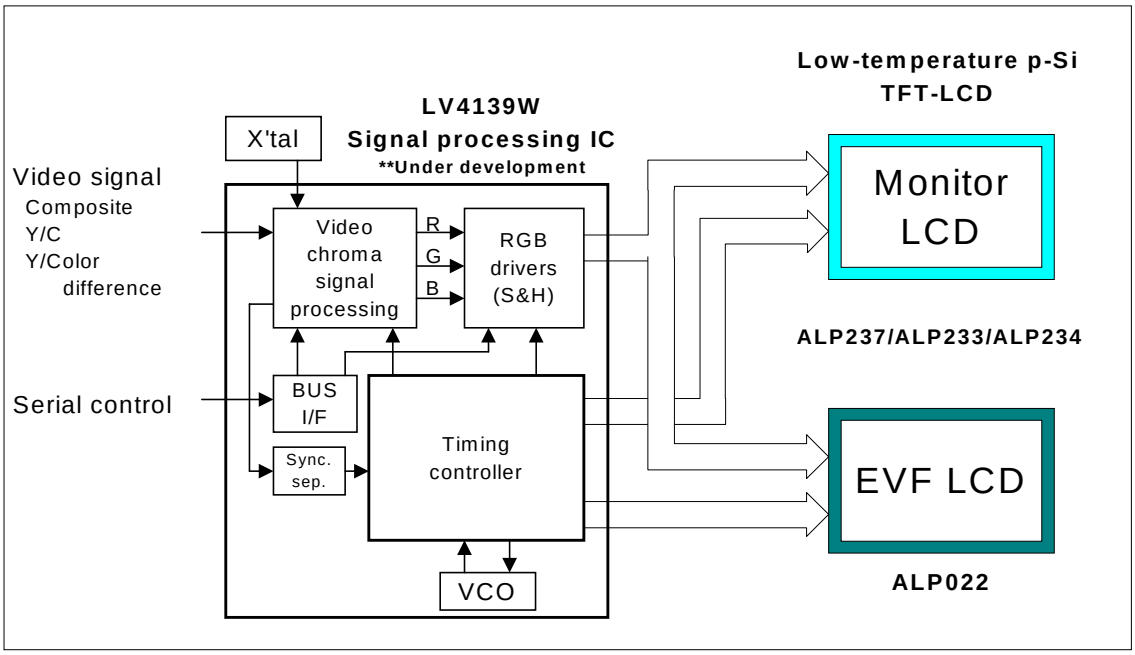


1chip drive (EVF & TN LCD)

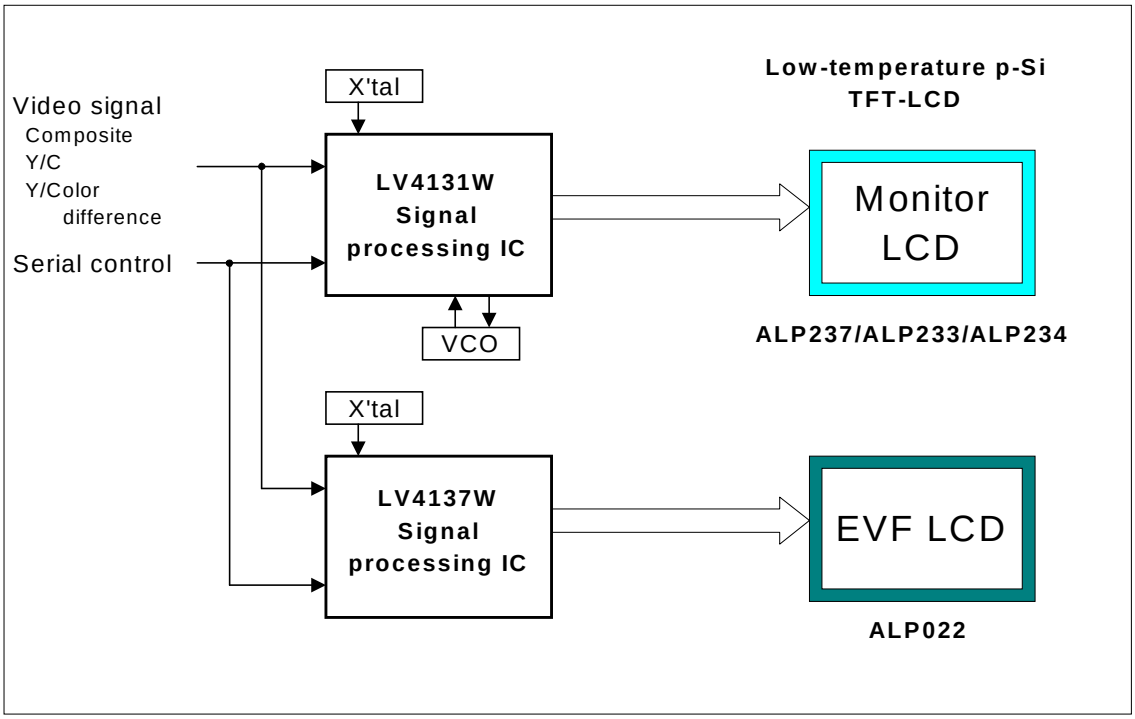


System Configuration

1chip drive (EVF & TN or Survival® LCD)



2chip drive (EVF & Survival® LCD)



Package Dimension