



AL320C  
LCD/OLED Display Controller  
Flyer

Version 1.2

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## Amendments

Revise Date	Contents	Page
06.11.16	Preliminary version 0.10	
06.12.16	Version 1.0	
	Add Digital Output : S-RGB interface for LTPS Panel	3
	Add OSD X,Y mirror for rear view or flip down application	3
	Remove the DCTI	3
	Remove Weak&Non-Standard Signal mode detection	3
	Remove EEPROM I/F interface	4
08.03.13	Version 1.1 Update the Operating Temperature	
08.08.12	Version 1.2 Remove "Operating Temp."	4
	Add Digital output description for "AMOLED Display"	4
	Description as "LCD/OLED Display Controller"	1

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## 1. FEATURES

### ◆ **Analog Input:**

Support multiple analog video inputs  
Support CVBS, S-Video & YPbPr inputs  
Support 10bit ADC, AGC & ACC  
Support Auto Multi-Standard  
NTSC/PAL/SECAM mode detection  
Adaptive 2D Comb-Filter video decoding for  
Y/C separation

### ◆ **Digital Input:**

Support ITU-R BT-656 Digital Input

### ◆ **Video Processing & Scaler:**

Closed Caption/V-Chip/WSS/WSS-J VBI  
decoding  
Macrovision copy protection detection  
Contrast/Brightness/Hue/Saturation  
adjustment  
Sharpness adjustment for Edge  
Enhancement  
YCbCr to RGB Color Space Conversion  
Programmable H/V Up & Down Scaling  
4:3 to/from 16:9 conversion  
Programmable 3-Channel Gamma Correction

### ◆ **OSD**

Built-in internal OSD 4K bytes RAM for  
programmable OSD function  
Support up to 4 OSD colors  
Support OSD Blinking & Blending

Support Programmable OSD window Position  
Support Programmable OSD window Size  
Support OSD X,Y mirror for rear view or flip  
down application

### ◆ **Digital Output:**

Support Small Digital Panels via Digital Serial  
RGB interface ( Typical as AUO and Toppoly )  
Support AMOLED Display via Digital Serial  
RGB output(Typical as CMEL)

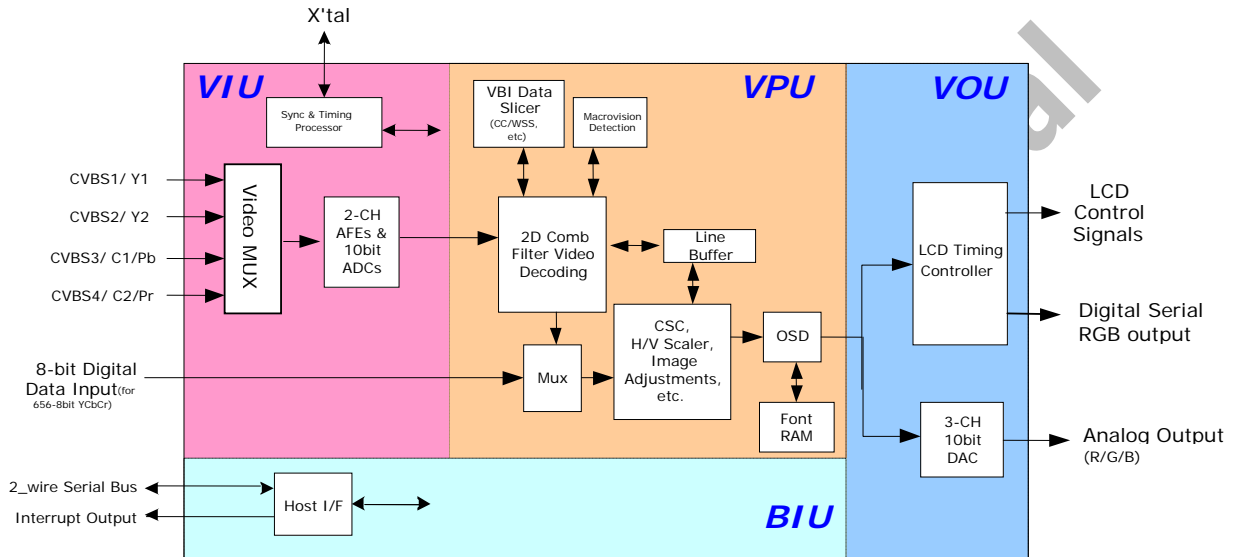
### ◆ **Analog Output & Tcon**

Support Analog LCD panels: 960x234,  
1200x234, 1440x234, 1920x234, etc.  
Low Power 3-CH DACs for Analog RGB  
Output  
Programmable TCON for various Analog LCD  
panels  
Support Image Mirror and Flip functions

### ◆ **Miscellaneous**

Support three PWM generators for general  
purpose control  
Support interrupt output pin for hardware  
mode detection  
Built-in Test Pattern Generator (Color Bar,  
Grey Scale, etc.)  
Low power design  
Small footprint package, 80pin LQFP  
10x10mm

## 2. FUNCTION BLOCK DIAGRAM



## 3. APPLICATIONS

- In-Car TV/ GPS/Navigation & Entertainment Display System
- Portable Video Display (Video Doorphone, Babymonitor, Digital Photo Frame etc.)
- Portable DVD Player
- Portable TV/DTV (ATSC, DVB-T/-S)

## 4. ORDERING INFORMATION

Part number	Package	PB Free
AL320C-LF-PBF	80-pin LQFP (10x10mm)	Yes

Note: AverLogic Technologies PB-free products employ special PB-free material sets; molding compounds/die attach materials and 100% matte tin plate termination finish do not use materials containing PBB, PBDE or red phosphorus for green-product chips. AverLogic's PB-free products are MSL classified at PB-free peak reflow temperatures that meet or exceed the PB-free requirements of IPC/JEDEC J Std-020C."