

Model No.: G080Y1-T01

Design Application Document

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1. GENERAL DESCRIPTION

1.1 OVERVIEW

G080Y1-T01 is a 8inch TFT Liquid Crystal Display module with a LED backlight unit WVGA and a-60-pin-and-1ch-TTL interface
G080Y1-T01 Driver chip include TCON function.

This module supports 800 (R.G.B)x 480 mode which main application is the automotive Monitor and industrial field.

This document main propose is for designer understand how to make the system board math the panel,and optimize the TFT LCD display performance.

1.2 GENERAL SPECIFICATIONS

Item	Specification	Unit
Diagonal Size	8 Inches	mm
Active Area	173.4 x 104.4	mm
Bezel Opening Area	175.2 x 105.84	mm
Outline Dimension	190 x120x 5.06	mm
Pixel Number	800 x R.G.B. x 480	pixel
Pixel Arrangement	RGB vertical stripe	-
Display Colors	262K(6 bits)/16.2M(8 bits)	color
Display Mode	Normal White	-
Surface Treatment	Hard Coating (3H), AG	-
Weight	200(Typ)	g
Brightness	600	cd/m2
Contrast Ratio	600:1	-
View angle(L/R/U/D)	70/70/60/60	deg
LCD Power consumption	0.45	W
LED BL Power consumption	3.45	W
Operation temperature	-30 ~ 85	°C

2. ELECTRICAL CHARACTERISTICS

2.1 DC/DC design spec

	Max (V)	Typical (V)	Min (V)	Current (mA) Max
VCC	3.6	3.3	3.0	(50)
VDA	12.24	12.00	11.76	(60)
VGH	18.70	18.00	17.30	(3)
VGL	-6.8	-7	-7.2	(3)
VCOM	-	4.3	-	-

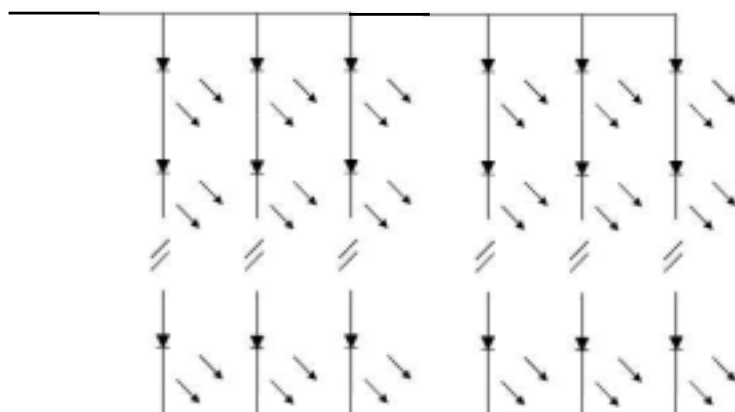
2.2 Color Garma design spec

	Max(V)	Typical(V)	Min(V)
GMA1	10.220	10.020	9.820
GMA2	8.435	8.270	8.105
GMA3	7.946	7.790	7.634
GMA4	7.599	7.450	7.301
GMA5	6.701	6.570	6.439
GMA6	5.539	5.430	5.321
GMA7	3.437	3.370	3.303
GMA8	2.917	2.860	2.803
GMA9	2.285	2.240	2.195
GMA10	0.173	0.170	0.167

2.3 LED BL design spec

	Max	Typical	Min
VL	33(V)	32(V)	30(V)
Current	-	120(mA)	-

6 Channel
9 pcs string/Channel
Total :54 pcs LED

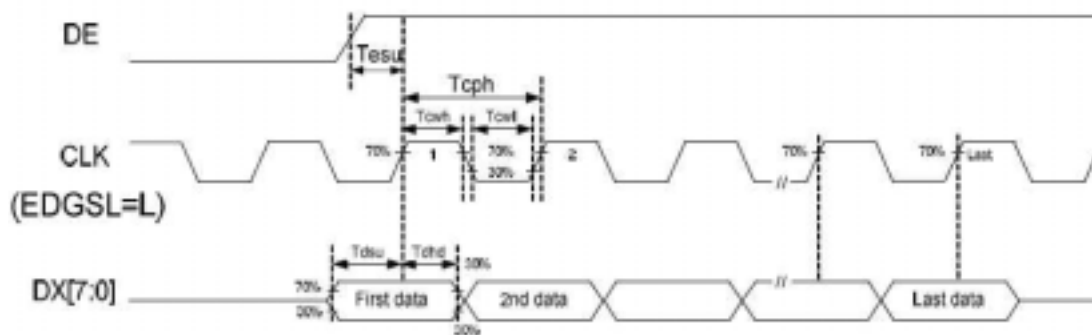


3. Timing Char

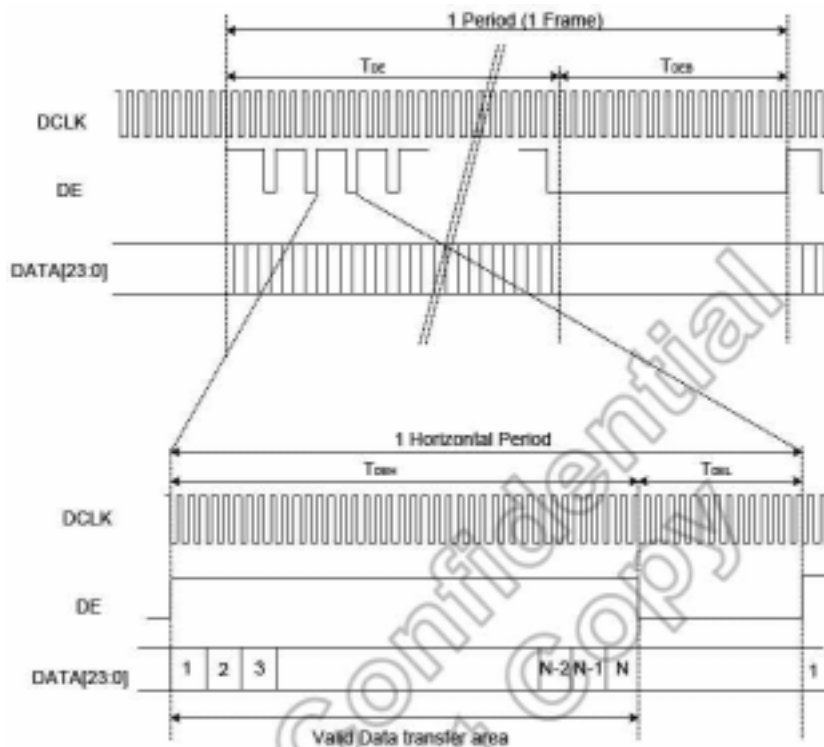
3.1 Timing Spec

PARAMETER	Symbol	Min.	Spec. Typ.	Max.	Unit
CLK frequency	F_{CPH}	-	33.26	-	MHz
CLK period	T_{CPH}	-	30.06	-	ns
CLK pulse duty	T_{CWH}	40	50	60	%
DE period	$T_{DEH} + T_{DEL}$	1000	1056	1200	T_{CEH}
DE pulse width	T_{DEH}	-	800	-	T_{CPH}
DE frame blanking	T_{DEB}	10	45	110	$T_{DEH} + T_{DEL}$
DE frame width	T_{DE}	-	480	-	$T_{DEH} + T_{DEL}$

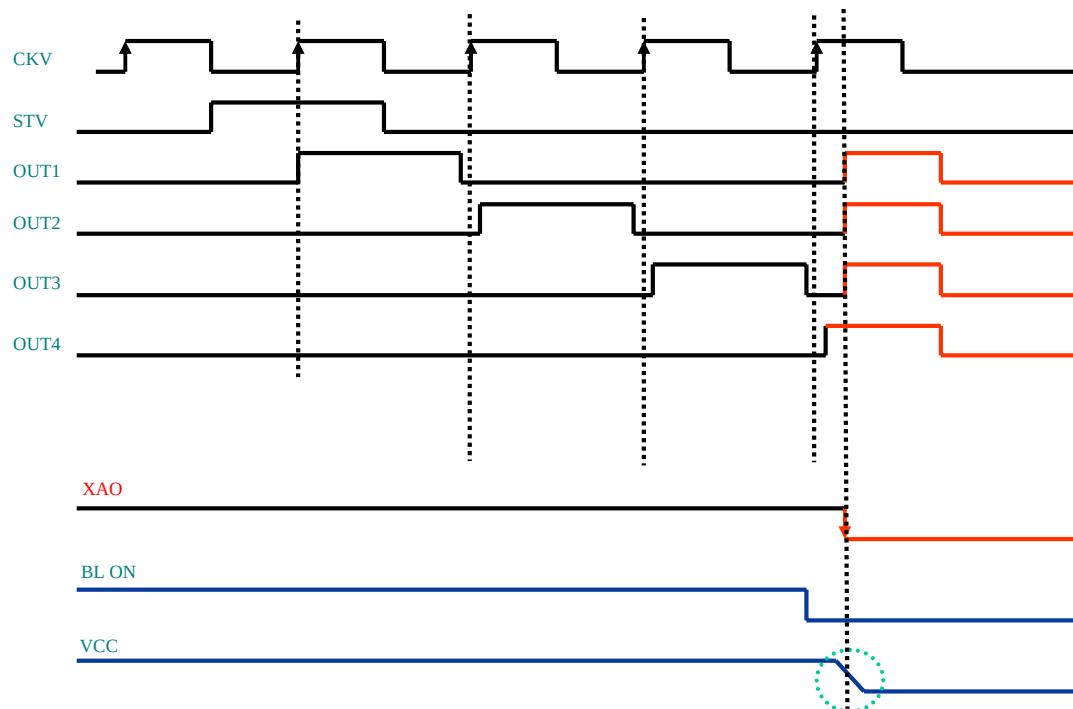
3.2 Clock and Data input Waveform



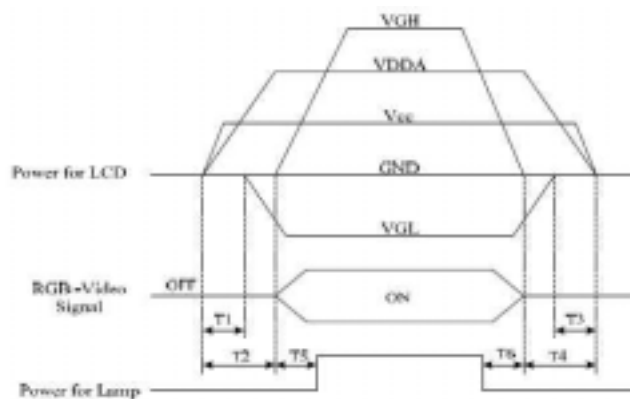
3.3 Data input format



3.4 XAO function



4. DC Power ON/OFF sequence



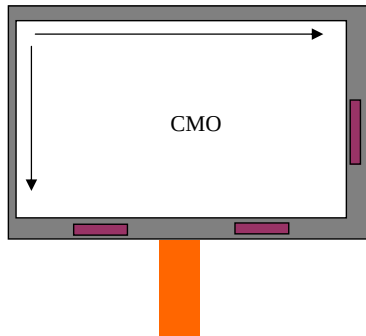
Timing Specifications:

- $0ms \leq T1 < T2$
- $0ms < T3 \leq T4$
- $0ms \leq T5$
- $0ms \leq T6$

5. Reverse Scan function

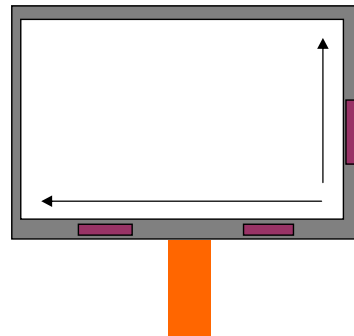
Normal:

LR : H
UD : L

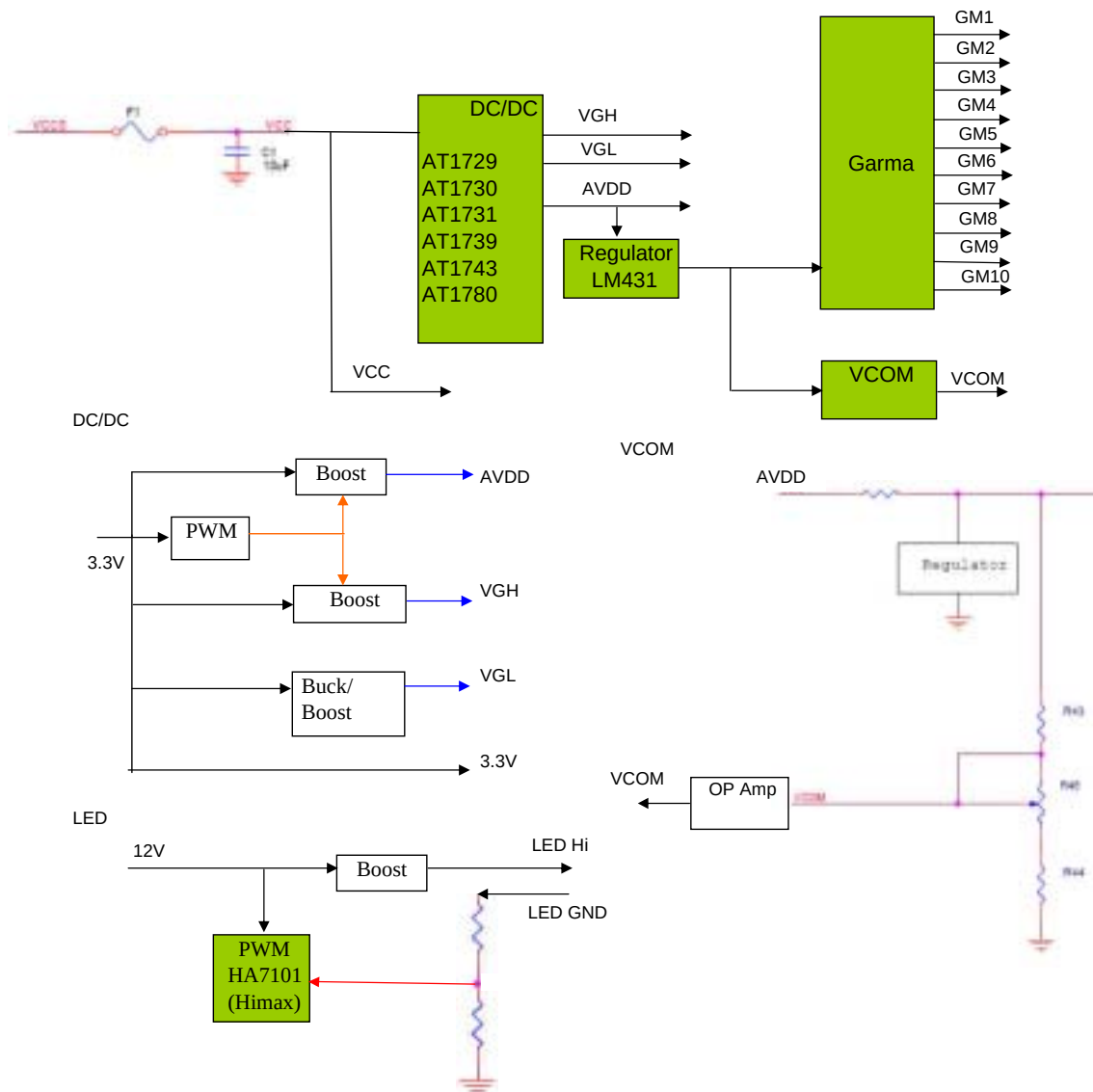


180 degree Reverse :

LR : L
UD : H



6. PCBA EE Topology



AVDD	10.5
V1	10.02
V2	8.27
V3	7.79
V4	7.45
V5	6.57
V6	5.43
V7	3.37
V8	2.86
V9	2.24
V10	0.17
VCOM	4.035

