MODEL:G43FW-LH100

BOE ProductSpecification

Ver. 0

43.0-inch FHD High-Brightness TFT-LCD Module

REVISION HISTORY

( ) Final specification ( ) Preliminary specification

Revision No.	Page	Description of changes	Date	Prepared
Ver. 0	-	Initial release.	2026.09.18	-

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1.0 GENERAL DESCRIPTION

1.1 Introduction

G43FW-LH100is a 43.0-inch color active-matrix TFT-LCD module assembled with a BOE QV430FHB-N10 open cell and a custom high-brightness OD12 backlight/mechanical structure. The module provides FHD resolution (1920 horizontal by 1080 vertical pixels), dual-channel 8-bit LVDS interface, normally-black ADS display mode and a nominal white luminance of 1000 cd/m².

1.2 Features

- 43.0-inch class / 42.5-inch active TFT-LCD
- 1920 × 1080 FHD resolution
- Dual-channel 8-bit LVDS interface
- 16.7M colors
- Normally Black / ADS mode
- Wide viewing angle
- High luminance: 1000 cd/m² Typ.
- 12 V LCD logic input

1.3 Application

- Commercial display / digital signage
- Display terminals for control systems
- High-brightness indoor display equipment
- Industrial and AV display products

1.4 General Specification

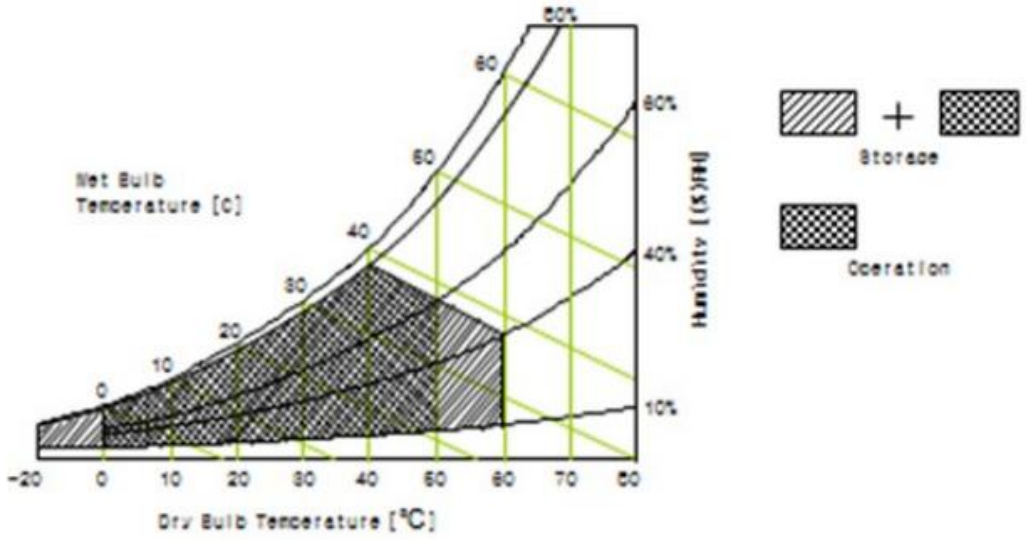
Parameter	Specification	Unit	Remarks
Display size	43.0	inch	
Open Cell	BOE QV430FHB-N10		
Active area	940.896(H) × 529.254(V)	mm	
Number of pixels	1920(H) × 1080(V)	pixels	
Pixel arrangement	RGB vertical stripe		
Display colors	16.7M	colors	8-bit
Display mode	Normally Black / ADS		
Dimensional outline	963.20(W) × 551.40(H) × 29.50(D) Max.	mm	Detail refer to drawing
Front opening	944.20(W) × 532.40(H)	mm	
Luminance	1000 Typ.	cd/m²	Center white
Surface treatment	AG, Haze 1%, 3H		Open cell front
Back-light	OD12		Custom BLU

2.0 ABSOLUTE MAXIMUM RATINGS

The following values are maximum ratings for the LCD open cell and environmental conditions. Exceeding these limits may cause abnormal operation or damage.

Parameter	Symbol	Min.	Max.	Unit	Remarks
Power Supply Voltage	VDD	-0.3	13.5	V	Ta = 25°C
Operating Temperature	TOP	0	+50	°C	
Storage Temperature	TST	-20	+60	°C	
Operating Ambient Humidity	Hop	10	80	%RH	No condensation
Storage Humidity	Hst	10	80	%RH	No condensation

Note: Wet-bulb temperature should not exceed 39°C and condensation shall be avoided.



3.0 ELECTRICAL SPECIFICATIONS

3.1 LCD Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remarks
Power Supply Input Voltage	VDD	10.8	12.0	13.2	Vdc	
Power Supply Ripple Voltage	VRP	-	-	300	mV	
Power Supply Current	IDD	-	500	950	mA	VDD=12V
Power Consumption	PDD	-	6.0	11.4	W	Open cell only
Rush Current	IRUSH	-	-	3.0	A	Approx. 2 ms

The open-cell current and power values are specified at VDD = 12.0 V, frame rate = 60 Hz and clock frequency = 74.25 MHz.

3.2 Backlight Unit

Parameter	Min.	Typ.	Max.	Unit	Remarks
LED Backlight Output Voltage	-	75	-	V	Per channel / module drawing
LED Backlight Output Current	-	600 × 2	-	mA	600 mA per channel
LED Power Consumption	-	90	-	W	75 V × 0.6 A × 2
Driver Input Voltage	-	TBD	-	Vdc	Driver-board data required
Dimming / Enable	-	TBD	-		PWM / BL-ON definition required

Note: The complete module typical power is approximately 96 W on an LED-output basis (6 W LCD logic + 90 W backlight). Actual DC input power shall include LED-driver conversion loss. No maximum module power is stated because the driver efficiency and worst-case backlight tolerance are not supplied.

4.0 OPTICAL SPECIFICATION

4.1 Overview

Optical characteristics are specified after sufficient warm-up at normal viewing direction. The module luminance values below are the complete module values.

4.2 Optical Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle - Right	θ3	CR > 10	-	89	-	Deg.	
Viewing Angle - Left	θ9	CR > 10	-	89	-	Deg.	
Viewing Angle - Up	θ12	CR > 10	-	89	-	Deg.	
Viewing Angle - Down	θ6	CR > 10	-	89	-	Deg.	
Contrast Ratio	CR	Center	800:1	1200:1	-		Open cell
Luminance of White	Yw	Center	900	1000	-	cd/m²	Complete module
Response Time	Tg	G-to-G	-	8	10	ms	Open cell
Gamma Scale			2.0	2.2	2.4		Open cell
Cell Transmittance			5.9	6.3	-	%	Open cell

The 900 cd/m² minimum and 1000 cd/m² typical luminance values are specified for the complete G43FW-LH100 module. No maximum luminance value is defined.

5.0 INTERFACE CONNECTION

5.1 LCD Electrical Interface Connection

LCD input connector: 51-pin dual-channel LVDS connector. The open-cell document specifies PM.LVS.S040505101 (UJC) or compatible connector.

Pin No.	Symbol	Function
2	SDA	I²C Data
3	SCL	I²C Clock
7	SELLVDS	High = JEIDA; Low/Open = VESA
11,18,21,34,37,44,45,46	GND	Ground
12-17,19-20,22-23	CH1	LVDS Channel 1 data/clock
28-33,35-36,38-39	CH2	LVDS Channel 2 data/clock
48,49,50,51	VCC	+12 V LCD logic power

5.2 Backlight Electrical Interface Connection

Connection Item	Definition
LED Channels	2 channels
LED Output	75 V Typ. / 600 mA per channel
LED Connector	TBD - connector part number and pinout not supplied
LED+ / LED- Mapping	TBD - confirm from harness / driver drawing

BL-ON / EN	TBD
PWM / DIM	TBD
Ground Reference	TBD - driver-board definition required

6.0 SIGNAL TIMING SPECIFICATION

The G43FW-LH100module uses the timing requirements of the BOE QV430FHB-N10 open cell and is operated in DE-only mode.

Item	Symbol	Min.	Typ.	Max.	Unit
Pixel / LVDS Clock	1/Tc	60	74.25	78	MHz
Frame Period	Tv	48.5	60	63	Hz
Horizontal Active	tHV	-	960	-	tCLK
Horizontal Total	tHP	1060	1100	1200	tCLK
Vertical Active	tVV	-	1080	-	tHP
Vertical Total	tVP	1100	1125	1149	tHP
LVDS Input Frequency	F	45	74.25	85	MHz

Note: The dual-channel LVDS architecture carries two pixels per clock; therefore the active horizontal timing value is 960 clocks for 1920 pixels.

7.0 INPUT SIGNALS, DISPLAY COLORS & GRAY SCALE OF COLORS

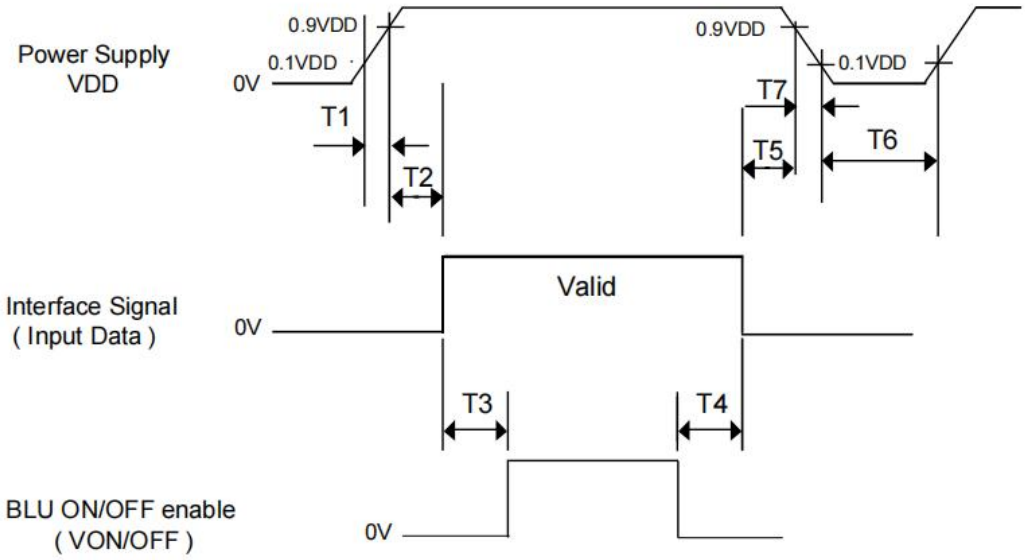
The panel is an 8-bit RGB display. Each color component is represented by 8 bits (R7…R0, G7…G0, B7…B0), providing 16.7 million display colors.

Display Color	Red Data	Green Data	Blue Data
Black	00h	00h	00h
White	FFh	FFh	FFh
Red	FFh	00h	00h
Green	00h	FFh	00h
Blue	00h	00h	FFh
Yellow	FFh	FFh	00h
Magenta	FFh	00h	FFh
Cyan	00h	FFh	FFh

Intermediate gray levels are generated by the corresponding 8-bit binary value for each RGB channel.

8.0 POWER SEQUENCE

The backlight shall be enabled only after the LCD logic power and interface signals are valid. During power-down, the backlight shall be disabled before invalidating interface data or removing LCD logic power.



Timing Parameter	Min.	Typ.	Max.	Unit	Remarks
T1	0.5	-	20	ms	VDD rising
T2	10	-	100	ms	Interface valid after VDD
T3	200	-	-	ms	Backlight-on delay
T4	200	-	-	ms	Backlight-off advance
T5	0	-	-	ms	
T6	1	-	-	s	Re-power interval

Backlight driver BL-ON/PWM electrical levels are TBD and shall be confirmed from the selected LED-driver board.

9.0 MECHANICAL CHARACTERISTICS

9.1 Dimensional Requirements

Parameter	Specification	Unit
Dimensional outline	963.20(W) × 551.40(H) × 29.50(D) Max.	mm
Front opening	944.20(W) × 532.40(H)	mm
Active area	940.896(W) × 529.254(H)	mm
Main body thickness	27.10	mm
Rear local dimensions	26.30 / 19.80	mm
Mounting pitch	400 × 400	mm
Mounting thread	4 × M6	
Open-cell weight	1510 Typ.	g
Complete module weight	TBD	kg

9.2 Mounting

Rear mounting pattern is 400 × 400 mm with four M6 threaded mounting points. See Appendix drawings for front, side and rear mechanical arrangement.

9.3 Surface Treatment

The open-cell front polarizer is anti-glare, Haze 1%, with 3H hardness. The complete module mechanical front surface shall be protected from impact and concentrated pressure.

10.0 RELIABILITY TEST

No.	Test Items	Conditions
1	High temperature storage	Ta = 60°C, 240 hrs
2	Low temperature storage	Ta = -20°C, 240 hrs
3	High temperature & high humidity operation	Ta = 50°C, 80%RH, 240 hrs
4	High temperature operation	Ta = 50°C, 240 hrs
5	Low temperature operation	Ta = 0°C, 240 hrs
6	Thermal shock	Ta = -20°C ↔ +60°C, 0.5 hr, 100 cycles
7	Vibration test (non-operating)	10-300 Hz random, 1.5 Grms, 30 min/axis
8	Shock test (non-operating)	50 G, 11 ms, ±X/±Y/±Z
9	Electro-static discharge	Air 15 kV / Contact 8 kV (reference)

Note: Complete-module reliability shall be validated on the final production configuration, including backlight driver, harness and mechanical assembly.

11.0 HANDLING & CAUTIONS

- Handle the LCD module with ESD protection. Electrostatic discharge may damage the panel electronics.
- Avoid mechanical shock, torsion and concentrated pressure on the LCD glass and backlight structure.
- Clean the polarizer with a soft dry cloth. Do not use aggressive chemicals.
- Do not connect or disconnect the LVDS or backlight connector while the module is operating.
- Observe the specified power-on / power-off sequence.
- Avoid condensation, corrosive gas, high humidity and direct exposure to water.
- Do not display a fixed pattern continuously for excessive periods because image sticking may occur.
- Do not disassemble or rework the module unless an approved process is available.

12.0 PRODUCT LABEL / SERIAL NUMBER

The production label format and serial-number naming rule are not defined in the supplied source documents. Final production release shall define at least the following items:

- Model: G43FW-LH100
- Revision
- Production date / lot
- Serial number
- Electrical rating
- Barcode / QR code if required

13.0 PACKING

Packing configuration is TBD. The final packing specification shall protect the panel against shock, vibration, moisture, electrostatic discharge and excessive surface pressure during transport and storage.

14.0 APPENDIX

14.1 Front / Side Mechanical Outline

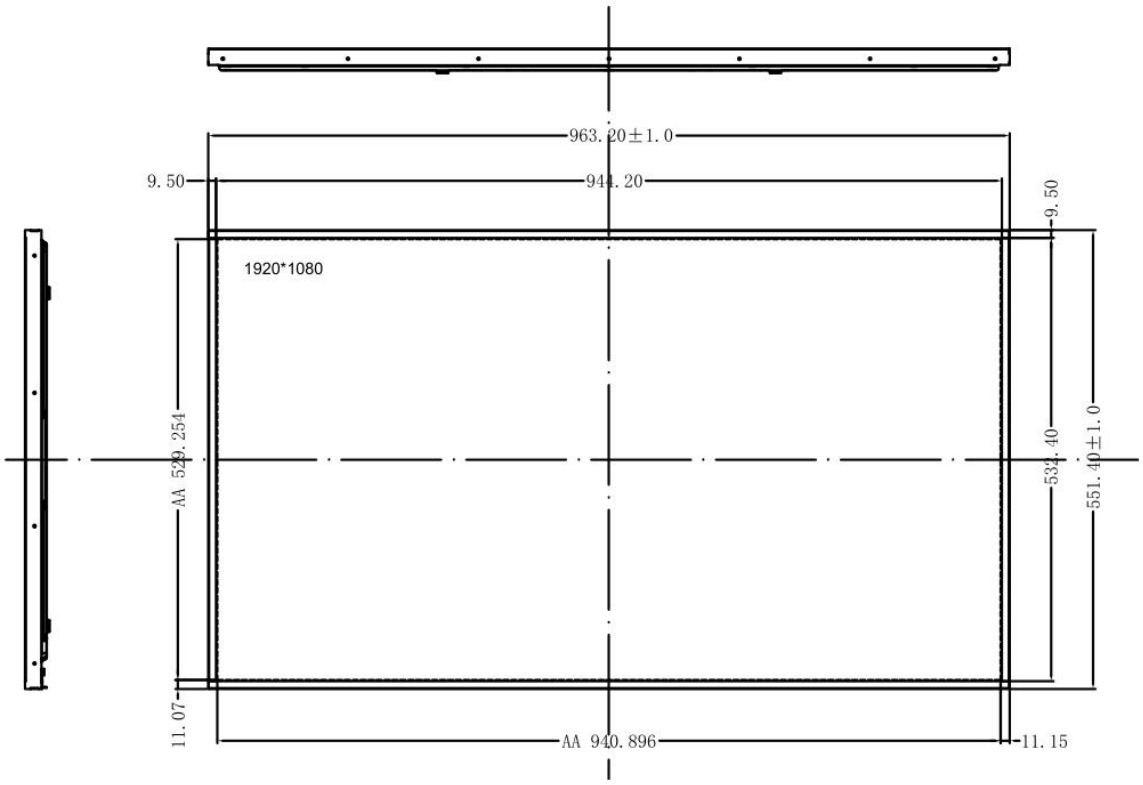


Figure 1. Front and side mechanical outline (drawing frame/title block removed).

14.2 Rear Mounting / Structure Outline

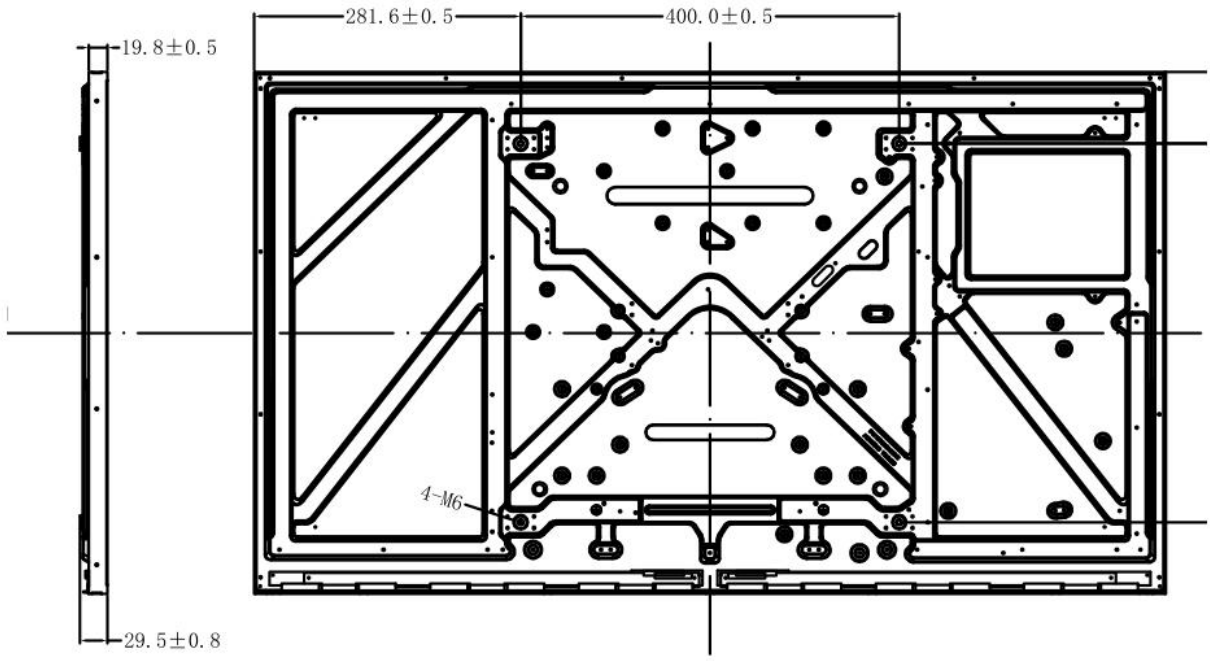


Figure 2. Rear mounting and structure outline, 400 × 400 mm mounting pitch, 4 × M6.

15.0 INTERNATIONAL STANDARDS

Item	Status / Requirement
RoHS	BOE open cell: compliant. Complete module compliance to be confirmed for all added parts.
Halogen Free	Not specified for complete module.
Safety / EMC	To be defined according to final application and target market.
Material declaration	To be provided for production release if required.