

### 3.3.Pin Descriptions

Bus Interface Pins																																							
Pin Name	I/O	Type	Descriptions																																				
IM2, IM1, IM0	I	Digital Input	Select the interface mode <table border="1"> <thead> <tr> <th>IM2</th><th>IM1</th><th>IM0</th><th>Interface</th></tr> </thead> <tbody> <tr> <td>0</td><td>0</td><td>0</td><td>MIPI-DBI Type B 24-bit bus (DB_EN = 1)</td></tr> <tr> <td>0</td><td>0</td><td>0</td><td>MIPI-DBI Type B 18-bit bus (DB_EN = 0)</td></tr> <tr> <td>0</td><td>0</td><td>1</td><td>MIPI-DBI Type B 9-bit bus</td></tr> <tr> <td>0</td><td>1</td><td>0</td><td>MIPI-DBI Type B 16-bit bus</td></tr> <tr> <td>0</td><td>1</td><td>1</td><td>MIPI-DBI Type B 8-bit bus</td></tr> <tr> <td>1</td><td>0</td><td>1</td><td>MIPI-DBI Type C Option 1 (3-line SPI)</td></tr> <tr> <td>1</td><td>1</td><td>0</td><td>MIPI DSI</td></tr> <tr> <td>1</td><td>1</td><td>1</td><td>MIPI-DBI Type C Option 3 (4-line SPI)</td></tr> </tbody> </table>	IM2	IM1	IM0	Interface	0	0	0	MIPI-DBI Type B 24-bit bus (DB_EN = 1)	0	0	0	MIPI-DBI Type B 18-bit bus (DB_EN = 0)	0	0	1	MIPI-DBI Type B 9-bit bus	0	1	0	MIPI-DBI Type B 16-bit bus	0	1	1	MIPI-DBI Type B 8-bit bus	1	0	1	MIPI-DBI Type C Option 1 (3-line SPI)	1	1	0	MIPI DSI	1	1	1	MIPI-DBI Type C Option 3 (4-line SPI)
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RESX	I	Digital Input	Reset input signal Initialize the chip with a low input. Be sure to execute a power-on reset after supplying power.																																				
CSX	I	Digital Input	DBI Type B: Chip select input signal Low: the chip is selected and accessible High: the chip is not selected and not accessible <b>Fix to IOVCC or DGND level when not in use.</b>																																				
D/CX	I	Digital Input	DBI Type B: Data/Command Selection pin Low: Command High: Parameter <b>Fix to IOVCC or DGND level when not in use.</b>																																				
WRX/SCL	I	Digital Input	DBI Type B: WRX pin, serves as a write signal DBI Type C: SCL pin as Serial Clock when operates in the serial interface <b>Fix to IOVCC or DGND level when not in use.</b>																																				
RDX	I	Digital Input	DBI Type B: serve as a read signal <b>Fix to IOVCC or DGND level when not in use.</b>																																				
SDA	I/O	Digital I/O	DBI Type C DIN/SDA: serial data input/output bi-direction pin <b>Fix to IOVCC or DGND level when not in use.</b>																																				
SDO	O	Digital Output	DBI Type C SDO: Serial data output <b>Leave the pin open when not in use.</b>																																				
TE	O	Digital Output	Serve as a TE (Tearing Effect) output signal <b>Leave the pin open when not in use.</b>																																				
CABC_PWM	O	Digital Output	The PWM frequency output for LED driver control																																				

			<i>Leave the pin open when not in use.</i>																		
MIPI_CLOCK_P	I	MIPI-DSI Input	DSI Positive polarity of low voltage differential clock signal <i>Leave the pin open when not in use.</i>																		
MIPI_CLOCK_N	I	MIPI-DSI Input	DSI Negative polarity of low voltage differential clock signal <i>Leave the pin open when not in use.</i>																		
MIPI_DATA_P	I/O	MIPI-DSI I/O	DSI Positive polarity of low voltage differential data signal <i>Leave the pin open when not in use.</i>																		
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VSYNC	I	Digital Input	DPI: Frame synchronizing signal <i>Fix to DGND level when not in use.</i>																		
HSYNC	I	Digital Input	DPI: Line synchronizing signal <i>Fix to DGND level when not in use.</i>																		
ENABLE	I	Digital Input	DPI: A data ENABLE input signal <i>Fix to DGND level when not in use.</i>																		
DOTCLK	I	Digital Input	DPI: Dot clock signal <i>Fix to IOVCC level when not in use.</i>																		

LCD Driving Signals			
Pin Name	I/O	Type	Descriptions
S960~S1	O	Source Output	Source output voltage signals applied to the liquid crystal <b>Leave the pin open when not in use.</b>

G480~G1	O	Gate Output	Gate driver output pins VGH: the level selecting gate lines VGL: the level not selecting gate lines <b>Leave the pin open when not in use.</b>
VCOM	O	LCD Output	The common voltage in DC VCOM driving The voltage range is set between -2V to 0V.
VGS	I	Power GND	Reference level for grayscale generating circuit <b>Fix to GND level</b>

Charge-pump and Regulator Circuit			
Pin Name	I/O	Type	Descriptions
DDVDH	O	Charge Pump Output	Power supply for the source driver and VCOM driver. Input voltage from the set-up circuit (4.5 to 6V). <b>Connect to a stabilizing capacitor between DDVDH and GND.</b>
DDVDL	O	Charge Pump Output	Power supply for the source driver and VCOM driver. Input voltage from the set-up circuit (-6 to -4.5V). <b>Connect to a stabilizing capacitor between DDVDL and GND.</b>
VGH	O	Charge Pump Output	Power supply for the gate driver <b>Connect to a stabilizing capacitor between VGH and GND.</b>
VGL	O	Charge Pump Output	Power supply for the gate driver <b>Connect to a stabilizing capacitor between VGL and GND.</b>
VCL	O	Charge Pump Output	VCL = -VCI ~ -2 <b>Connect to a stabilizing capacitor between VCL and GND.</b>
MIPI_LDO	O	LDO Output	MIPI DSI core power pad <b>Connect to a stabilizing capacitor between MIPI_LDO and GND when operating in the MIPI DSI Interface.</b> <b>Leave the pin open when not in use.</b>
C52A, C52B C51A, C51B C41A, C41B C11A, C11B C12A, C12B	O	Analog Output	Capacitor connection pins for the step-up circuit 1 <b>Connect to a stabilizing capacitor between C51A and C51B.</b> <b>Connect to a stabilizing capacitor between C52A and C52B.</b> <b>Connect to a stabilizing capacitor between C41A and C41B.</b> <b>Connect to a stabilizing capacitor between C11A and C11B.</b> <b>Connect to a stabilizing capacitor between C12A and C12B.</b>
C21A, C21B	O	Analog Output	Capacitor connection pins for the step-up circuit 2. <b>Connect to a stabilizing capacitor between C21A and C21B.</b>

Power Pads			
Pin Name	I/O	Type	Descriptions

VCI	P	Power Supply	A supply voltage to the analog circuit. Connect to an external power supply of 2.5 ~ 3.3V. <b>Connect to a stabilizing capacitor between VCI and GND.</b>
IOVCC	P	Power Supply	A supply voltage to the digital circuit. Connect to an external power supply of 1.65 ~ 3.3V.
VDD (VCORE)	O	Power Supply	Internal logic voltage output <b>Connect to a stabilizing capacitor between VDD and GND.</b>
DGND	P	Power GND	Ground for the internal logic: DGND = 0V <b>When using COG, connect to GND on the FPC to prevent noise.</b>
AGND	P	Power GND	AGND for the analog side: AGND = 0V <b>When using COG, connect to GND on the FPC to prevent noise.</b>

Test Pads			
Pin Name	I/O	Type	Descriptions
DUMMY	-	-	Dummy pad <b>Leave the pin open when not in use.</b>
TS [2:0]	I	-	Test pins, these pins are internal weak pull low. <b>Leave the pin open when not in use.</b>
TESTP	I	Power GND	Test pins. <b>Fix to GND level</b>