


MCT039C12CW480128LML	480 x 128	RGB Interface	TFT Module
Specification			
Version: 1		Date: 02/02/2018	
Revision			
1	24/01/2018	First issue	

Display Features					
Display Size	3.9"				
Resolution	480 x 128				
VGA Size	N/A				
Orientation	Landscape				
Appearance	RGB				
Logic Voltage	3.3V				
Interface	RGB				
Brightness	400 cd/m ²				
Touchscreen	CTP				
Module Size	105.50 x 37.00 x 5.13				
Operating Temperature	-20°C ~ +70°C			Box Quantity	Weight / Display
Pinout	40 - Way FFC			---	---

Display Accessories	
Part Number	Description
MPBV6	40 Way FFC to cable and wires. Driven by any driver board that can be wired to a 1mm pitch SHDR-40V-S-B receptacle.
LEDV3	Constant current LED back light driver.
VBWV8	TFT driver GUI creator. Can be driven from any microcontroller board or PC/SBC with an RS232 port.
MCIB-11	HDMI to RGB 40-way TFT. Can be used in conjunction with single board computers, i.e. Raspberry Pi

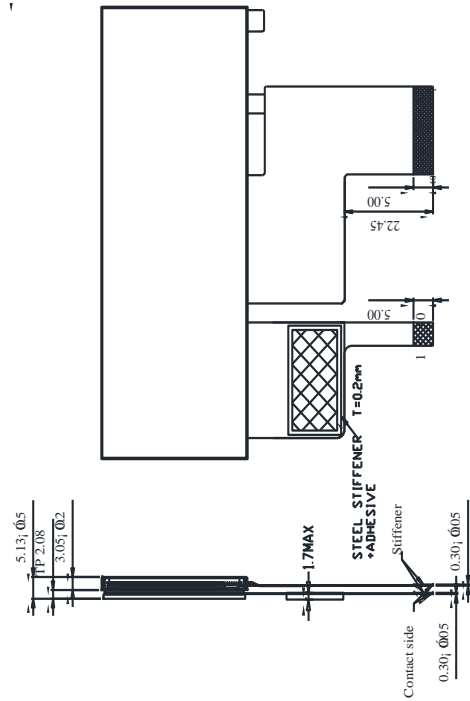
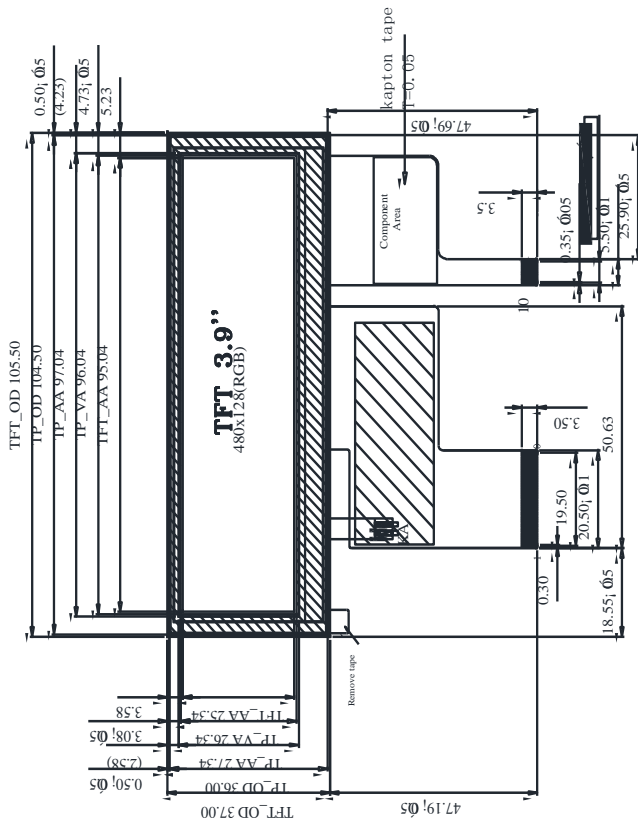
Optional Variants		
Variants	Appearances	Voltage
No Touch Resistive Touch Panel		

Mechanical Specifications

Module Size	105.50 x 37.00 x 5.13 (With Backlight)				W x H x D mm
Active Area	95.04 x 25.34	W x H mm	Hole-to-Hole	---	---
Dot Size	---	---	Dot Pitch	0.066 x 0.198	W x H mm

PIN NO	SYMBOL	PIN NO	SYMBOL
1	VLED-	21	B0
2	VLED+	22	B1
3	GND	23	B2
4	VCC	24	B3
5	R0	25	B4
6	R1	26	B5
7	R2	27	B6
8	R3	28	B7
9	R4	29	GND
10	R5	30	DCLK
11	R6	31	DISP
12	R7	32	HSYNC
13	G0	33	VSYNC
14	G1	34	NC
15	G2	35	NC
16	G3	36	GND
17	G4	37	NC
18	G5	38	NC
19	G6	39	NC
20	G7	40	NC

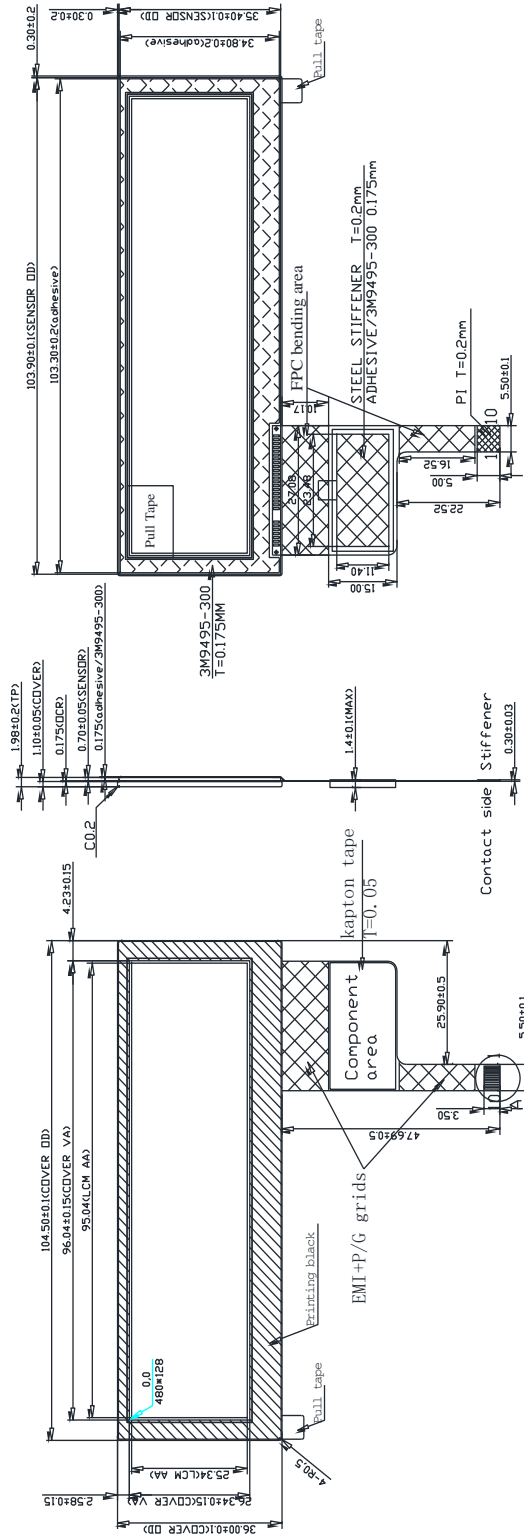
PIN NO	SYMBOL
1	VSS
2	VDDT
3	SCL
4	NC
5	SDA
6	NC
7	/RST
8	NC
9	/INT
10	VSS



The non-specified tolerance of dimension is ± 0.3 mm .

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Capacitive Touch Panel



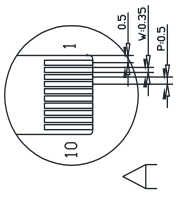
Back view

Side view

Front view

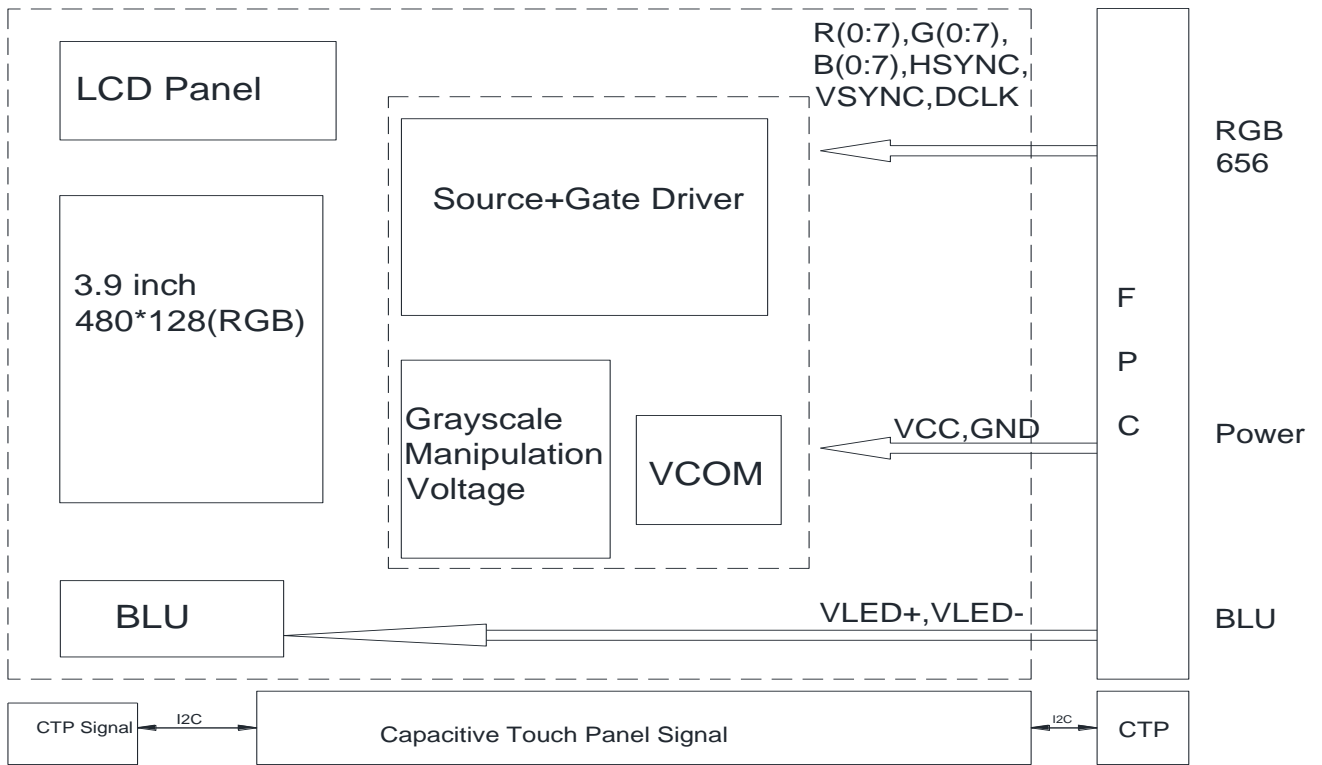
PIN NO.	Definition
1	VSS
2	VDDT
3	SCL
4	NC
5	SDA
6	NC
7	RST
8	NC
9	INT
10	VSS

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Block Diagram



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Pin Layout			
Pin	Symbol	Description	Remark
1	VLED-	Backlight LED Cathode	
2	VLED+	Backlight LED Anode.	
3	GND	System Ground	
4	VCC	Power supply for logic operation	
5~12	R0~R7	Data bus	
13~20	G0~G7	Data bus	
21~28	B0~B7	Data bus	
29	GND	System Ground	
30	DCLK	Pixel clock signal	
31	DISP	Display on/off control	
32	HSYNC	Horizontal Sync signal	
33	VSYNC	Vertical Sync signal	
34	NC	No connection (Option DE)	
35	NC	No connection	
36	GND	System Ground	
37	NC	No connection (Option XR for RTP)	
38	NC	No connection (Option YD for RTP)	
39	NC	No connection (Option XL for RTP)	
40	NC	No connection (Option YU for RTP)	

CTP Pin layout			
Pin	Symbol	Description	Remark
1	VSS	Ground for analogue circuit.	
2	VDDT	Power Supply: +3.0V	
3	SCL	I2C Clock Input.	
4	NC	No Connect.	
5	SDA	I2C Data input and output.	
6	NC	No Connection.	
7	/RST	External Reset, LOW is active.	
8	/WAKE	External Interrupt from the host.	
9	/INT	External Interrupt to the host.	
10	VSS	Ground for analogue circuit.	

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Timing Characteristics

Item	Symbol	Min	Typ	Max	Unit	
CLK frequency	Fclk	-	9.05	-	MHz	
DCLK Period	Tclk	-	111	-	ns	
HSYNC	Period Time	Th	510	524	862	DCLK
	Display Period	Thdisp	-	480	-	DCLK
	Back Porch	Thbp	6	16	127	DCLK
	Front Porch	Thfp	24	28	255-	DCLK
	Pulse Width	Thw	11	16	127	DCLK
VSYNC	Period Time	Tv	280	288	526	H
	Display Period	Tvdisp	-	272	-	H
	Back Porch	Tvbp	4	8	127	H
	Front Porch	Tvfp	4	8	127	H
	Pulse Width	Tvw	1	3	20	H

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Absolute Maximum Ratings						
Item	Symbol	Condition	Min	Typ	Max	Unit
Operating Temperature	TOP	---	-20	---	70	°C
Storage Temperature	TST	---	-30	---	80	°C

Electronic Characteristics						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Power Voltage	VCC	---	3.00	3.30	3.60	V
Driver Current	ICC	---	---	15	25	mA
Touch Logic Voltage	VDDT	---	2.80	---	3.30	V

TFT Characteristics							
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit	
Viewing Angle	Hor.	ΘR	CR≥10	---	65°	---	Deg
		ΘL		---	65°	---	Deg
	Ver.	ΦT		---	65°	---	Deg
		ΦB		---	50°	---	Deg
Contrast Ratio	CR	At optimised viewing angle.	---	500	---	---	
Response Time	T Rise	θ=0° Φ=0°	---	10	---	.ms	
	T Fall		---	15	---	.ms	

LED Characteristics						
Item	Symbol	Condition	Min	Typ	Max	Unit
LED Forward Voltage	VLED+	---	14.00	15.00	17.00	V
LED Forward Current	ILED	---	---	40.00	---	mA
LED Colour Range	Wx	---	0.269	0.319	0.369	---
	Wy	---	0.273	0.323	0.373	---
LED Brightness	---	---	300	400	---	cd/m ²
LED Life Time	---	---	---	50k	---	Hours

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