

Product Datasheet

Customer	Symmetron
Customer Code	RU-SMT
Customer Type	Integrator/Dealer
Internal Code	ICI2510P.C3.P3.V1
Product	Pcap Controller
FW	
Application Type	<input checked="" type="checkbox"/> TP Standard <input type="checkbox"/> MP Standards
Version	1.0.1
Date	2018.03.14

ICI2510P.C3.P3.V1

Controller Datasheet

History Log

Version	Date	Amendment	remarks
V1.0.1	2018/3/14	All	First Draft

1. Product Introduction

The ICI2510P.C3.P3.V1 capacitive touch panel has 98 TRX channels and supports up to 21.5 inches on the industrial panel.

The control board is based on the powerful single-chip IC-ILI2510—built-in 32-bit MCU, and has a high-speed CDC module (capacitance-to-data conversion module), which supports three-interface mode communication including USB, I2C, and internal boost module. Internal self-calibration.

The ICI2510P.C3.P3.V1 capacitive touch panel supports a variety of touch structures, including G/G, G/F/F and other TP stacks. Mainly used in AIO, POS machines, industrial equipment, etc.

Meet the Restriction of Hazardous Substances (RoHS) and Electromagnetic Compatibility (EMC) standards.

Features:

- Built-in ICI2510 Mono Touch Chip
- Support 98 channels capacitive touch screen
- Programmable High Voltage Circuits
- High-speed ADC
- Support Mutual Capacitance
- Support Self-Capacitance
- Support Auto-calibration
- Support I2C port VDDIO 1.8V and 3.3V
- Built-in Noise processing Unit
- Support IEC61000-4-6(CS测试), 3级: 10Vrms
- Support G/G, GFF, etc.
- Built-in 32bits MCU
- Support ITO Sensor Mutual Capacitance range: 1pF to 4pF
- Conform to RoHS standards
- Conform to EMC Standards

Test Item	Specification	Performance
EMI	CISPR 22, 30MHz~1GHz	Under -4dB
ESD	IEC 61000-4-2, Level 4 Air: +/- 15kV; Contact: +/- 8kV	Class B

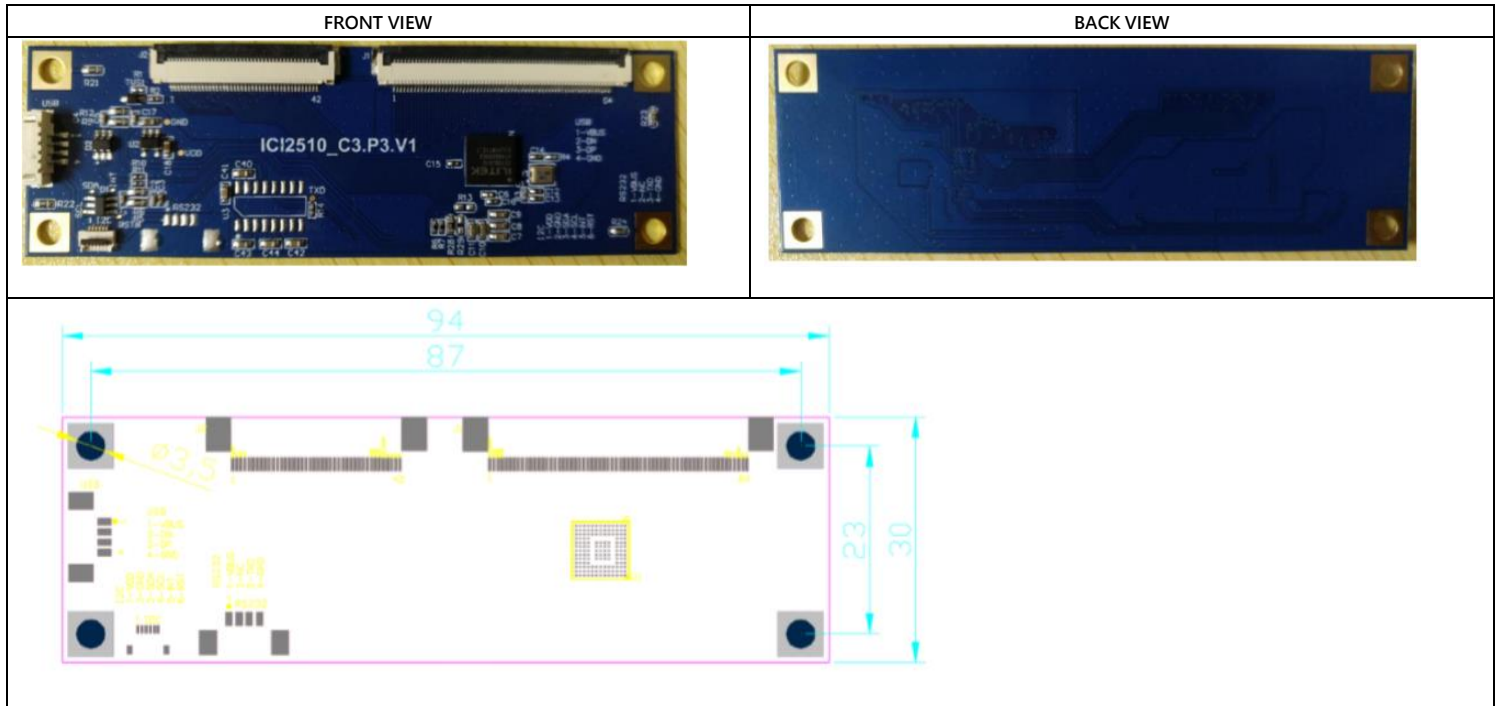
RS	IEC 61000-4-3, Level 4: 30V/m	Class A
EFT	IEC 61000-4-4, Level 4 AC power line: 4kV; I/O port: 2kV	Class A
CS	IEC 61000-4-6, Level 3: 10Vrms	Class A

2. Controller PC info.

2.1 Basic Info.

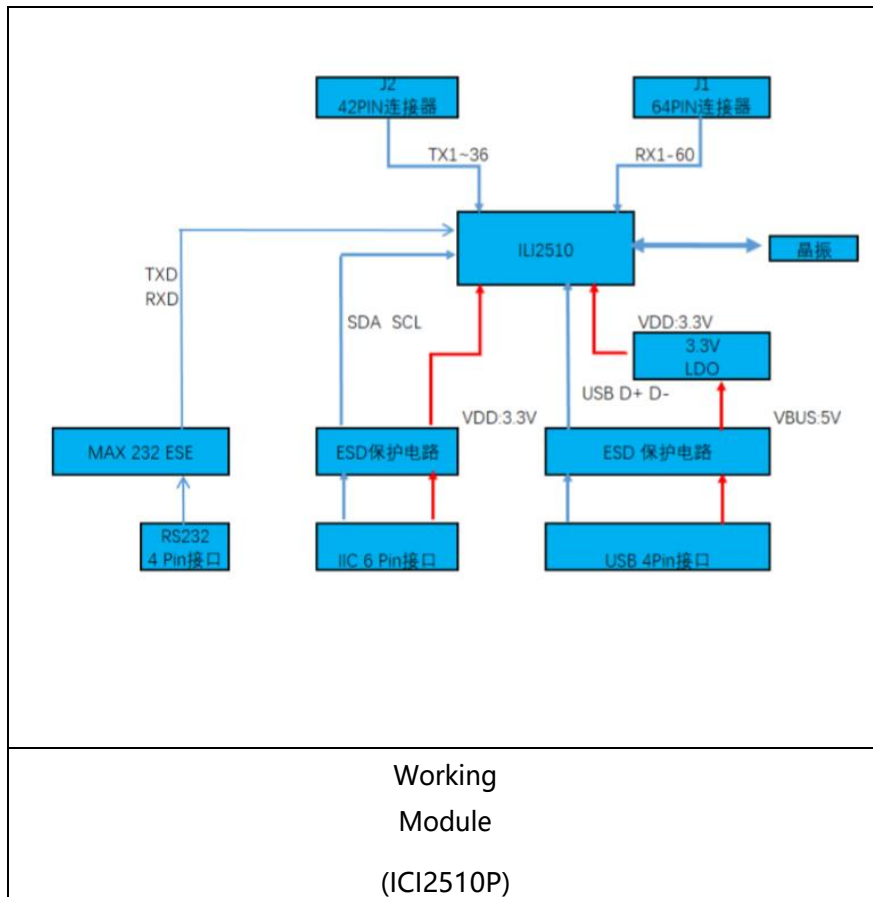
ICI2510P.C3.P3.V1	
PCB Outline	W: 30mm, L: 94mm
Support Touch Panel Size	13.3~21.5inch (Recommended)
TX	36
RX	60
Com	USB: 2.0 Full Speed, IIC, RS232
Input Voltage	USB: 4.75V ~ 5.25V, Normal 5V; IIC :VDD 2.7~3.3V /3.3V,VDDIO=VDD
Working Temp.	-40 ~ 85°C
Warehousing Temp.	-40 ~ 150°C
Max. Matrix Scope	16384 X 9600
Power Consumption	Active Mode (10 points Touch):TYP:@100mA @USB=5V , @21.5" TP

2.2 Outlook



2.3 Module Introduction

The ICI2510P.C3.P3.V1 capacitive screen control board includes ICI2510, 5V-3.3V step-down circuit block (LDO), 12MHz crystal and ESD protection circuit. Supports USB2.0 interface, IIC interface J2, ICE Adjusting interface. The control board has 96 channels fixed to RX60*TX36 and is distributed on a 51PIN connector J1 and J2, center blocked by ESD_DUMMY.



Graphic 1 : ICI2510P Module

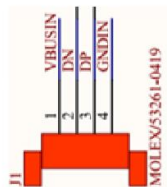
2.4 PIN Definition

2.4.1 FPC connector PIN definition:

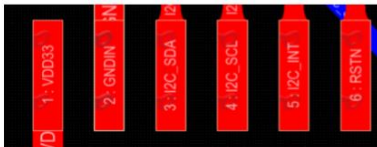
连接器 J1, 64-Pin, Pin Pitch=0.5mm, Height=0.8mm																				
编号	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
定义	ESD_DUMMY	RX60	RX59	RX58	RX57	RX56	RX55	RX54	RX53	RX52	RX51	RX50	RX49	RX48	RX47	RX46	RX45	RX44	RX43	RX42
编号	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
定义	RX41	RX40	RX39	RX38	RX37	RX36	RX35	RX34	RX33	RX32	RX31	RX30	RX29	RX28	RX27	RX26	RX25	RX24	RX23	RX22
编号	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
定义	RX21	RX20	RX19	RX18	RX17	RX16	RX15	RX14	RX13	RX12	RX11	RX10	RX9	RX8	RX7	RX6	RX5	RX4	RX3	RX2
编号	61	62	63	64																
定义	RX1	GNDIN	NC	NC																

连接器 J2, 42-Pin, Pin Pitch=0.5mm, Height=0.8mm																				
编号	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
定义	GNDIN	TX1	TX2	TX3	TX4	TX5	TX6	TX7	TX8	TX9	TX10	TX11	TX12	TX13	TX14	TX15	TX16	TX17	TX18	TX19
编号	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
定义	TX20	TX21	TX22	TX23	TX24	TX25	TX26	TX27	TX28	TX29	TX30	TX31	TX32	TX33	TX34	TX35	TX36	ESD_DUMMY	NC	NC
编号	41	42																		
定义	NC	NC																		

2.4.2 J4 USB Port PIN Definition



2.4.3 IIC Port PIN Definition

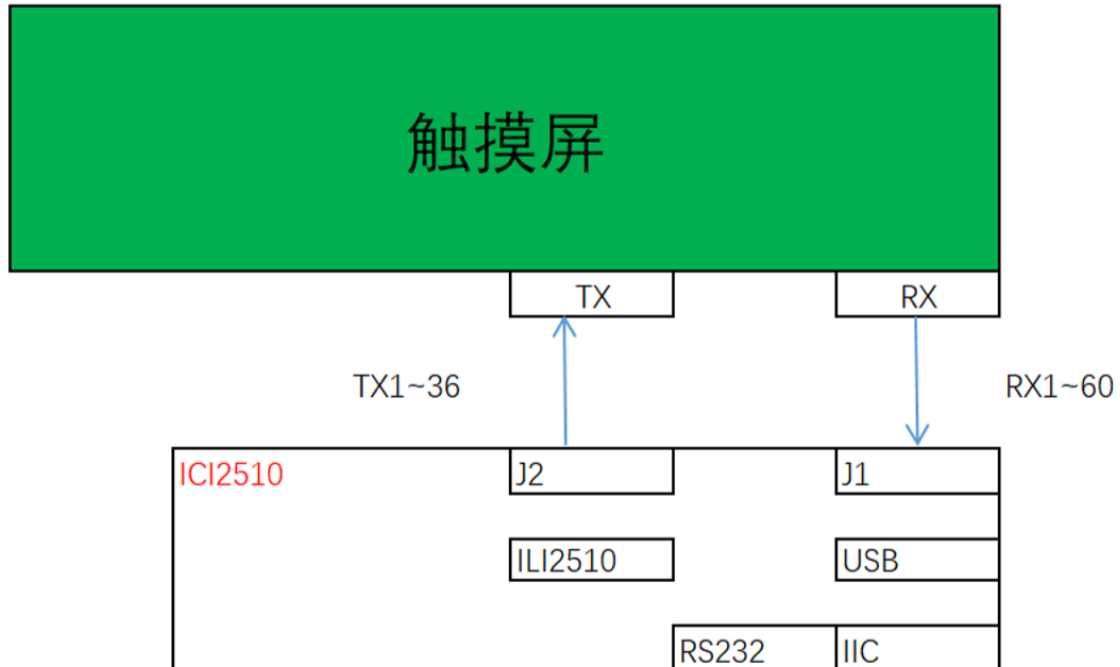


2.4.4 Connector Model

Connector	1st Supplier	2nd Supplier	3rd Supplier
USB	MOLEX/53261-0419	NA	NA

2.5 Connect to Touch Panel

2.5.1 Connect to Touch Panel



Graphic 2 : Connector to Touch Panel

3.5.2 Prevent control board from shorting when plugging in FPC

- Make sure the FPC cable is connected and locked on the control panel before powering up.
- Be sure to disconnect the power before plugging and unplugging the FPC cable.

3. List of Systems supported

3.1 Windows System

System	Port	Built-in Drive	ILITEK Drive
Windows 7	USB	Yes	No
Windows 8/8.1	USB	Yes	No
	I2C	Yes	No
Windows 8.1 Embedded	USB	Yes	No
	I2C	Yes	No
Windows 10	USB	Yes	No
	I2C	Yes	No
Windows 2000	USB	No	Single Touch(Mouse Mode)
Windows XP	USB	No	Single Touch(Mouse Mode)
Windows Vista	USB	No	Single Touch(Mouse Mode)
Windows CE 5.0	USB	No	Single Touch(Mouse Mode)
Windows CE 6.0	USB	No	Single Touch(Mouse Mode)
	I2C	No	Support,WinCE6.0_I2C_To_Mouse_v1.0.1, Single Touch(Mouse Mode)
Windows CE 7.0	USB	No	Single Touch(Mouse

			Mode)
Windows XP Embedded	USB	No	Single Touch(Mouse Mode)

3.2 Linux and Android System

System	Port	Built-in Drive	ILITEK Drive
Kernel 2.6.31 Downwards (x86, 32/64 bit)	USB	No	Single Touch(Mouse Mode) ILITEK Provide
Kernel 2.6.31 Downwards (ARM/MIPS, 32/64 bit)	USB	No	Supported, ILITEK FW and Drive, Single Touch
Kernel 2.6.32 Upwards (x86, 32-bit) (Need X-Window)	USB	No	Supported, ilitek_auv3_7, Multi-touch
	I2C	No	Supported, ilitek_aimv2_4, Multi-touch
Kernel 2.6.32 Upwards (x86, 64-bit) (Need X-Window)	USB	No	Supported, ilitek_auv3_7, Multi-Touch
	I2C	No	Supported, ilitek_aimv2_4, Multi-touch
Kernel 3.0.8 Upwards (x86, 32-bit) (Need X-Window)	USB	Yes	No
	I2C	No	Supported, ilitek_aimv2_4, Multi-Touch
Kernel 3.0.8 Upwards (x86, 64-bit) (Need X-Window)	USB	Yes	No
	I2C	No	Supported, ilitek_aimv2_4, Multi-Touch
	USB	Yes	No

Android 4.2.x Upwards (ARM, 32-bit)	I2C	No	Supported, ilitek_aimv2_ 4, Multi- Touch
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3.3 Mac System

System	Port	Built-in Drive	ILITEK Drive
Mac OS 9.x	USB	No	Single Touch (Mouse Mode)
Mac OS X (Intel CPU)	USB	No	Single Touch (Mouse Mode)

4. Electrical Characteristics

4.1 Limit Electrical Parameters

Exceeding the conditions listed in “Absolute Maximum Ratings” may cause permanent damage to the equipment, and long-term operation within the maximum ratings may also affect the reliability of the equipment.

Table 0-1: Absolute Maximum Ratings

Parameter	Icon	Min.	Max.	Unit
USB 5V Power Input	V_{BUS}	-0.3	6.0	V
V_{DD} Power Input	V_{DD}	-0.3	3.4	V
VDD3D Power Input	VDD3D	-0.3	3.3	V
VDD3A Power Input	VDD3A	-0.3	3.3	V

4.2 Recommended Working Environment

Table 0-2: Working Environment

Parameter	Icon	Min.	Max.	Unit
V _{BUS} to GND	V _{BUS}	4.75	5.25	V
V _{DD} to GND	V _{DD}	2.7	3.3	V
VDD3D Refer to GND	VDD3D	2.7	3.3	V

4.3 DC Characteristics

Table 0-3: USB DC Characteristics

Parameter	Icon	Min.	Reg.	Max.	Unit	Condition
Input low level	V _{IL}	0		0.8	V	
Input high level (Drive)	V _{IH}	2.0			V	
Differential input Sensitivity	V _{DI}	0.2			V	(D+) – (D-)
Differential Common mode range	V _{CM}	0.8		2.5	V	Includes V _{DI} range
Single-ended Receive threshold	V _{SE}	0.8		2.0	V	
Receiver hysteresis	V _{RH}		200		mV	
Output low level(drive)	V _{OL}	0		0.3		
Output high level(drive)	V _{OH}	2.8		3.6		
Output signal cross voltage	V _{CRS}	1.3		2.0		
Pull-up Resistor	R _{PU}	1.425		1.575		
Pull-down Resistor	R _{PD}	14.25		15.75		
Upstream port terminates the pull-up voltage(RPU)	V _{TRM}	3.0		3.6		

