Chefree Technology Corp.

Projected Capacitive Touch Control Board Specification

Controller Model	**WE87534254-CABS-A001(CH-101CS-6562)**
Version	**v.0.0.1**

Release Record			
Date	**Version**	**Description**	**Note**

Control Board

This P-Cap touch control board (WE87534254-CABS-XXXX) designed from Areser-tec for CH-101CS-6562 is applicable to industrial, commercial and consumer markets which may need driver support as well as Windows OS. And its user interface condition suits the traditional mouse-like click operation, beepers and multi-windows support. It is dedicated to operating in harsh environments like humidity, higher/ lower temperature or other electro-magnetic noisy condition.

The performance of the IC controller embedded on the control board is also designed to suit for all kinds of touch sensor stack up like GG, OGS, G1F, GFF and difference kinds of sensor materials of ITO, metal mesh, silver nano wire.

Driver Support

OS	Version	Function
Window	Window XP PosReady 2009 Window 7 Window 8.1 Window 10	MouseLike Buzzer Dual Monitor
Linux	Ubuntu 10.04~14.10 Fedora 13~21 OpenSUSE 10.2~13.2 RHEL 5.X~7.0 Debian 4.X~7.X	
Android	Android 4~5	HID Mode

Feature:

I. Sensing & Driving
   1. Support Channel
      a. Tx40, Rx52 channels
      b. < 1ms scan time (4 edge mode with 1 burst mode)
   2. Robust sensing
      a. LCD noise immunity
      b. RF & power network noise immunity
      c. Versatile design adaptable for different panel manufacturer

II. Data Processing
   1. Fine Touch output resolution
   2. Up to 10 touch position detection & tracking (X, Y, Z)
   3. Passive Stylus (The exact size of such a passive stylus is to be defined)
   4. Gesture detection
      a. Gesture for each separated touch point
      b. Multi-touch gesture
      c. High speed stylus tracking mode for character transcription
      d. False object detection Palm/Face/Hand/Ear
   5. Frequency/Burst hoping capability
   6. Touch response time: 10ms -> 60ms at startup
   7. Position refresh time: 5ms -> 8ms (Power saving)

III. CPU/IF
   1. 32-bit CPU with timer and interrupt handling
   2. USB Full speed interface
      a. Full speed 12 Mbps
      b. Win 7, Win8/8.1, Win10 HID compliant
   3. I2C slave interface
      a. Fast mode 400kHz

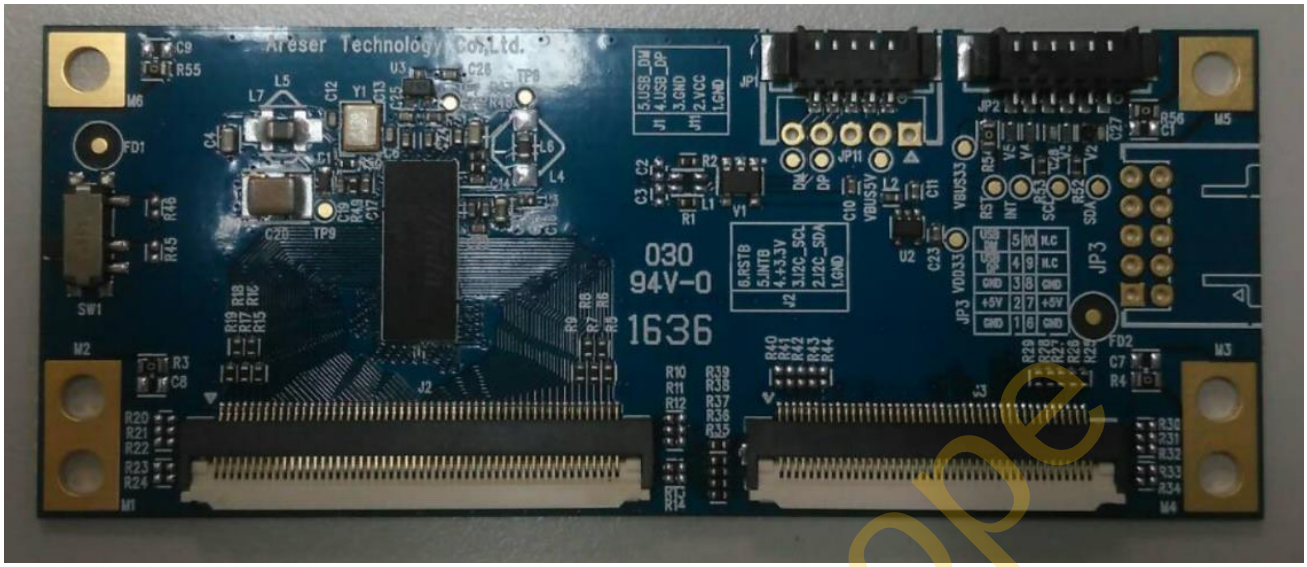
IV. Supply voltage
   1. High-voltage Drive Power supply VCD = 32V
   2. Analog sense power supply AVDD = 3.3V
   3. I/O power supply: VIO = 5V (USB)
   4. I/O power supply: VIO = 3.3V (I2C)
   5. Core power supply: VCORE = 1.8 V

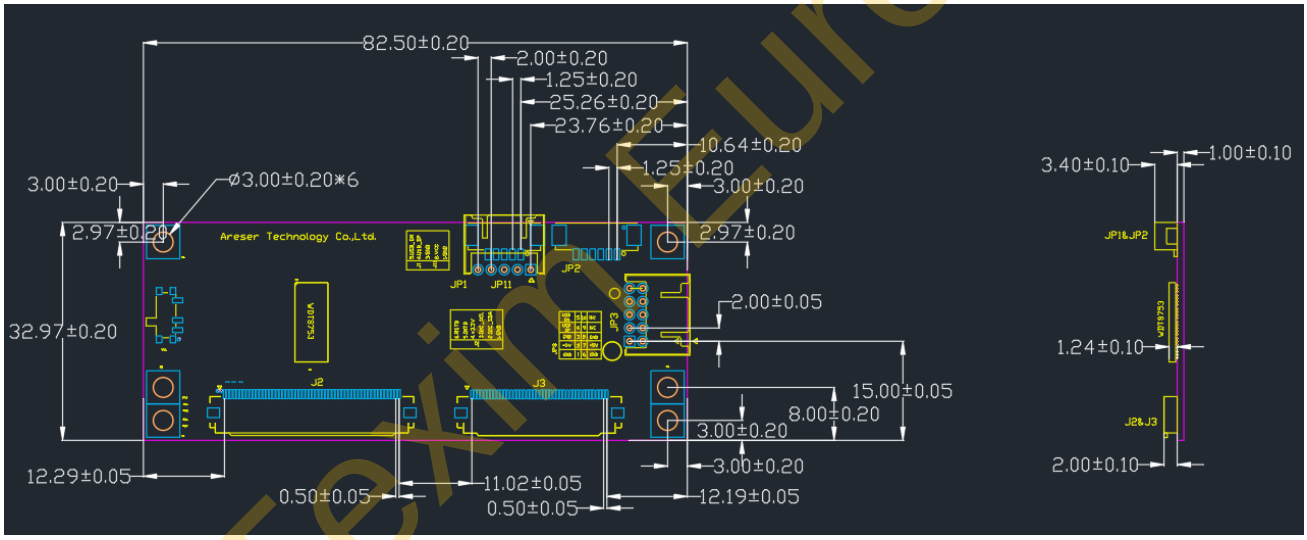
V. Power consumption
   1. Selective Suspend mode: 11.8mA @VCD=29.37V (with 50 ms latency)
   2. Suspend mode: 0.002mA
   3. Active mode: 43.2mA @VCD=29.37V (continuous refresh of 5 touch @125 Hz refresh

time)

Controller Dimension

Controller Dimension: 82.5 x 32.97mm (+-0.2mm)





Thickness:

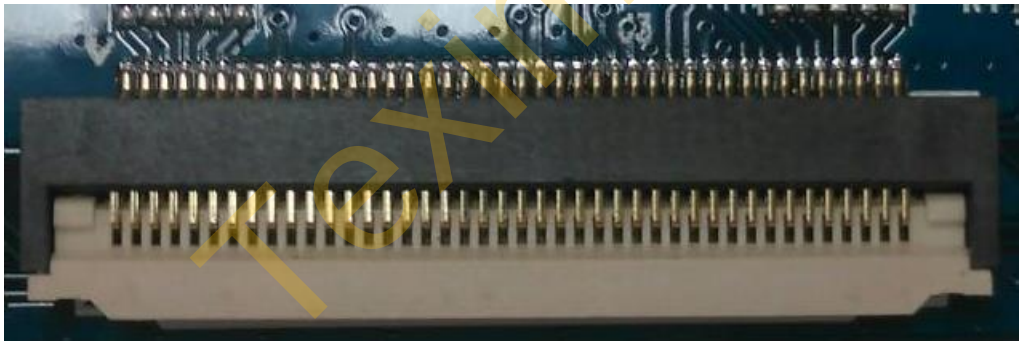
- With JP11 and JP3: 8.3mm (+-0.1mm)
- Without JP11 and JP3: 4.4mm (+-0.1mm)

FPC Connector Pin Assignment

FPC Connector Pin Define: J2

J2 Connector										
PIN	1	2	3	4	5	6	7	8	9	10
Channel Define	Rx_S0	Rx1	Rx2	Rx3	Rx4	Rx5	Rx6	Rx7	Rx8	Rx9
PIN	11	12	13	14	15	16	17	18	19	20
Channel Define	Rx10	Rx11	Rx12	Rx13	Rx14	Rx15	Rx16	Rx17	Rx18	Rx19
PIN	21	22	23	24	25	26	27	28	29	30
Channel Define	Rx20	Rx21	Rx22	Rx23	Rx24	Rx25	Rx26	Rx27	Rx28	Rx29
PIN	31	32	33	34	35	36	37	38	39	40
Channel Define	Rx30	Rx31	Rx32	Rx33	Rx34	Rx35	Rx36	Rx37	Rx38	Rx39
PIN	41	42	43	44	45	46	47	48	49	50
Channel Define	Rx40	Rx41	Rx42	Rx43	Rx44	Rx45	Rx46	Rx47	Rx48	Rx49
PIN	51	52	53	54						
Channel Define	Rx50	Rx51	Rx52	Rx_S1						

FPC Connector Pin Define: J3



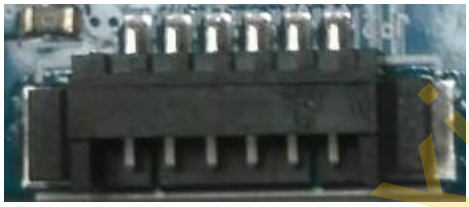
J3 Connector										
PIN	1	2	3	4	5	6	7	8	9	10
Channel Define	Tx_S0	Tx1	Tx2	Tx3	Tx4	Tx5	Tx6	Tx7	Tx8	Tx9
PIN	11	12	13	14	15	16	17	18	19	20
Channel Define	Tx10	Tx11	Tx12	Tx13	Tx14	Tx15	Tx16	Tx17	Tx18	Tx19
PIN	21	22	23	24	25	26	27	28	29	30
Channel Define	Tx20	Tx21	Tx22	Tx23	Tx24	Tx25	Tx26	Tx27	Tx28	Tx29
PIN	31	32	33	34	35	36	37	38	39	40
Channel Define	Tx30	Tx31	Tx32	Tx33	Tx34	Tx35	Tx36	Tx37	Tx38	Tx39
PIN	41	42								
Channel Define	Tx40	Tx_S1								

Interface Connector

Pin definition: JP1 (USB)

JP1 Connector				
PIN1	PIN2	PIN3	PIN4	PIN5
GND	VCC_5V	GND	USB_DP	USB_DM

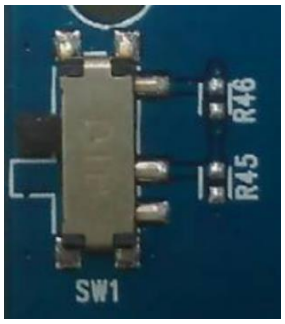
Pin definition: JP2 (I2C)



JP2 Connector					
PIN1	PIN2	PIN3	PIN4	PIN5	PIN6
GND	I2C_SDA	I2C_SCL	3.3V	INTB	RSTB

Interface Switch

Interface Switch: USB



Interface Switch: I2C