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## **Control Board Product Specification**

Product Description	Capacitive Touch Panel Control Board
Product Content	SiS9250 x 5 + SiS9202 x 2
Part Number	90052AGAA
Revision	1.1

Approved by	Reviewed by	Prepared by



## Revision History

Date	Revision	Description
2019.8.8	1.0	Initial Release
2020.8.6	1.1	1. Update General Information & Specifications content 2. Update USB/UART Connector Pin Define content 3. Update FPC Connector Pin Assignment content



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## 1. General Information & Specifications

Items	Description
Interface(Note1)	Standard USB 1.1 Full Speed Compliant / UART
Power Supply	5V(+/- 5% DC)
Power Consumption(Note2)	200mA(Typ. @25°C) / 220mA(Max. @25°C)
Channel Number	Tx : 80(Max.) / Rx : 142(Max.)
Support Size(Note3)	40" ~ 45"
Operating Temperature	-20°C ~ +70°C
Storage Temperature	-30°C ~ +80°C
Relative Humidity	95% at 60°C, RH Non-Condensing
Compliance	RoHS / REACH
Control Board Dimension	176mm(L) x 53mm(W) x 7.95mm(H)(Typ.)
Control Board Weight	TBD
Resolution	4096 x 4096
Report Rate(Note4)	> 100Hz
Response Time(Note5)	Average < 30ms
Linearity(Note6)	≤ +/- 1.5mm(Center) / ≤ +/- 2.0mm(Edge)
Accuracy(Note6)	≤ +/- 1.5mm(Center) / ≤ +/- 2.0mm(Edge)
Support Active Multi-Pen	Yes

### Note :

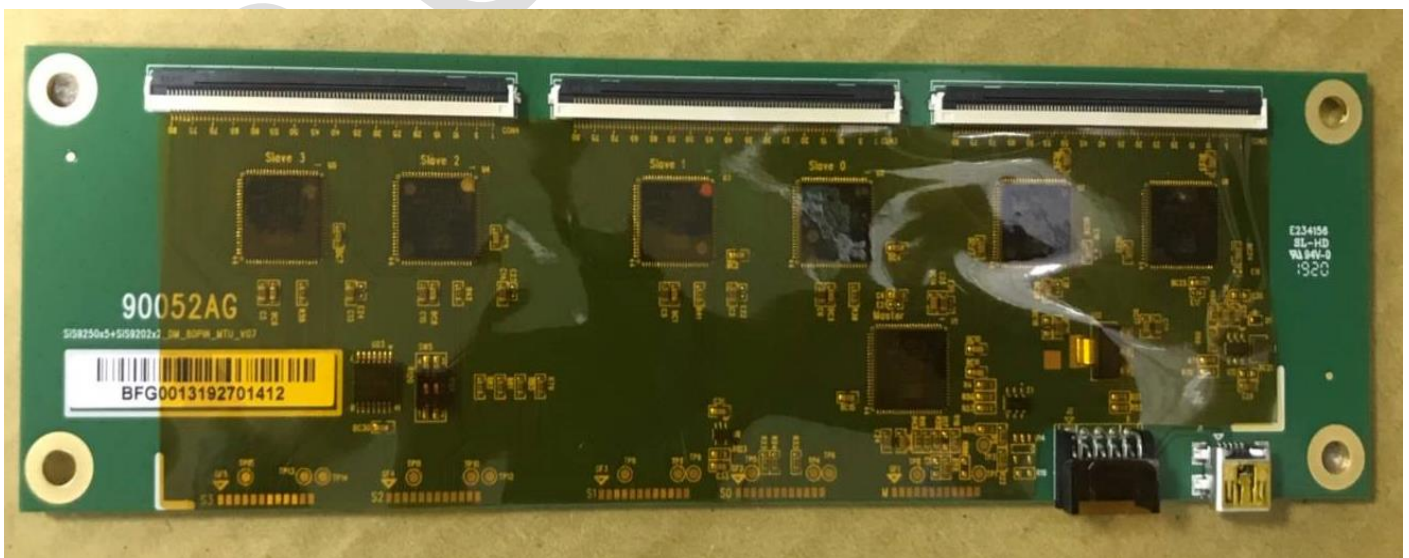
1. UART\_TX and UART\_RX signal level are 3.3V, and it only supports to report coordinate function.
2. For USB interface, based on maximum channel number and F/W parameters.
3. Depending on channel number and touch performance requirements.
4. 10 fingers touch, depending on channel number and F/W parameters.
5. It's defined as the period between contact with the digitizer and input report being received by the host. It's also related to F/W parameters.
6. Depending on sensor pitch size and F/W parameters.



## 2. Support Operation System

OS	Version	Touch Point	Interface
<b>Windows</b>	Win10	Multi - Touch	USB
	Win8		
	Win7		
	WinXP	1 Finger - Touch	USB
	WinCE 6	1 Finger - Touch	USB/I2C
	WinCE 7	Multi - Touch	USB/I2C
<b>Linux</b>	Android 4.0~7.0	Multi - Touch	USB/I2C
	Ubuntu 12.04~16.04	Multi - Touch (kernel 3.0 and later)	USB
	Fedora 17~27		
	Debian 7~9	1 Finger - Touch	
	CentOS 6~7		
	RHEL 6~7		
	SUSE 11/12/13/42		
<b>Mac</b>	10.9(Mavericks)	1 Finger - Touch	
	10.10(Yosemite)		
	10.11(El Capitan)		
	10.12 (Sierra)		
	10.13(High Sierra)		

## 3. Control Board Physical Appearance

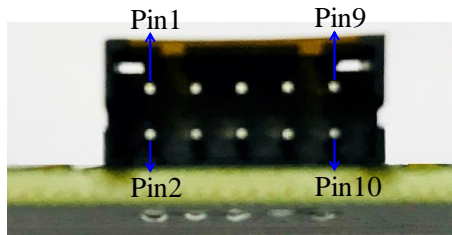




#### 4. USB/UART Connector Pin Define

<b>J1 : Mini – USB(MSB-SWE37S30CR-5AB-LF)</b>			
Pin	Symbol	Type	Description
1	VBUS	Power	5V Input Power Pin
2	D-	Signal	5V level USB Signal
3	D+	Signal	5V level USB Signal
4	ID	Power	Ground Connection
5	GND	Power	Ground Connection

#### **J2 : Aces-10P-P2.0(59012-0100N-003)**



Pin	Symbol	Type	Description
1	GND	Power	Ground Connection
2	GND	Power	Ground Connection
3	5V	Power	5V Input Power Pin
4	5V	Power	5V Input Power Pin
5	GND	Power	Ground Connection
6	GND	Power	Ground Connection
7	D+	Signal	5V level USB Signal
8	UART_TX	Signal	3.3V UART Signal level
9	D-	Signal	5V level USB Signal
10	UART_RX	Signal	3.3V UART Signal level

#### 5. FPC Connector Pin Assignment

<b>CON3 : Hirose_TF06L-80S-0.5SH</b>															
Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	GND	GND	GND	D1	Rx1	Rx2	Rx3	Rx4	Rx5	Rx6	Rx7	Rx8	Rx9	Rx10	Rx11
Pin	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Rx12	Rx13	Rx14	Rx15	Rx16	Rx17	Rx18	Rx19	Rx20	Rx21	Rx22	Rx23	Rx24	Rx25	Rx26
Pin	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45



	Rx27	Rx28	Rx29	Rx30	Rx31	Rx32	Rx33	Rx34	Rx35	Rx36	Rx37	Rx38	Rx39	Rx40	Rx41
Pin	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
	Rx42	Rx43	Rx44	Rx45	Rx46	Rx47	Rx48	Rx49	Rx50	Rx51	Rx52	Rx53	Rx54	Rx55	Rx56
Pin	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
	Rx57	Rx58	Rx59	Rx60	Rx61	Rx62	Rx63	Rx64	Rx65	Rx66	Rx67	Rx68	Rx69	Rx70	Rx71
Pin	76	77	78	79	80										
	Rx72	GND	GND	GND	GND										

CON4 : Hirose_TF06L-80S-0.5SH															
Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	GND	GND	GND	GND	Rx73	Rx74	Rx75	Rx76	Rx77	Rx78	Rx79	Rx80	Rx81	Rx82	Rx83
Pin	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Rx84	Rx85	Rx86	Rx87	Rx88	Rx89	Rx90	Rx91	Rx92	Rx93	Rx94	Rx95	Rx96	Rx97	Rx98
Pin	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
	Rx99	Rx100	Rx101	Rx102	Rx103	Rx104	Rx105	Rx106	Rx107	Rx108	Rx109	Rx110	Rx111	Rx112	Rx113
Pin	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
	Rx114	Rx115	Rx116	Rx117	Rx118	Rx119	Rx120	Rx121	Rx122	Rx123	Rx124	Rx125	Rx126	Rx127	Rx128
Pin	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
	Rx129	Rx130	Rx131	Rx132	Rx133	Rx134	Rx135	Rx136	Rx137	Rx138	Rx139	Rx140	Rx141	Rx142	D1
Pin	76	77	78	79	80										
	GND	GND	GND	ID1	ID0										

CON5 : Hirose_TF06L-80S-0.5SH															
Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Tx1	Tx2	Tx3	Tx4	Tx5	Tx6	Tx7	Tx8	Tx9	Tx10	Tx11	Tx12	Tx13	Tx14	Tx15
Pin	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Tx16	Tx17	Tx18	Tx19	Tx20	Tx21	Tx22	Tx23	Tx24	Tx25	Tx26	Tx27	Tx28	Tx29	Tx30
Pin	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
	Tx31	Tx32	Tx33	Tx34	Tx35	Tx36	Tx37	Tx38	Tx39	Tx40	Tx41	Tx42	Tx43	Tx44	Tx45
Pin	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
	Tx46	Tx47	Tx48	Tx49	Tx50	Tx51	Tx52	Tx53	Tx54	Tx55	Tx56	Tx57	Tx58	Tx59	Tx60
Pin	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
	Tx61	Tx62	Tx63	Tx64	Tx65	Tx66	Tx67	Tx68	Tx69	Tx70	Tx71	Tx72	Tx73	Tx74	Tx75
Pin	76	77	78	79	80										
	Tx76	Tx77	Tx78	Tx79	Tx80										

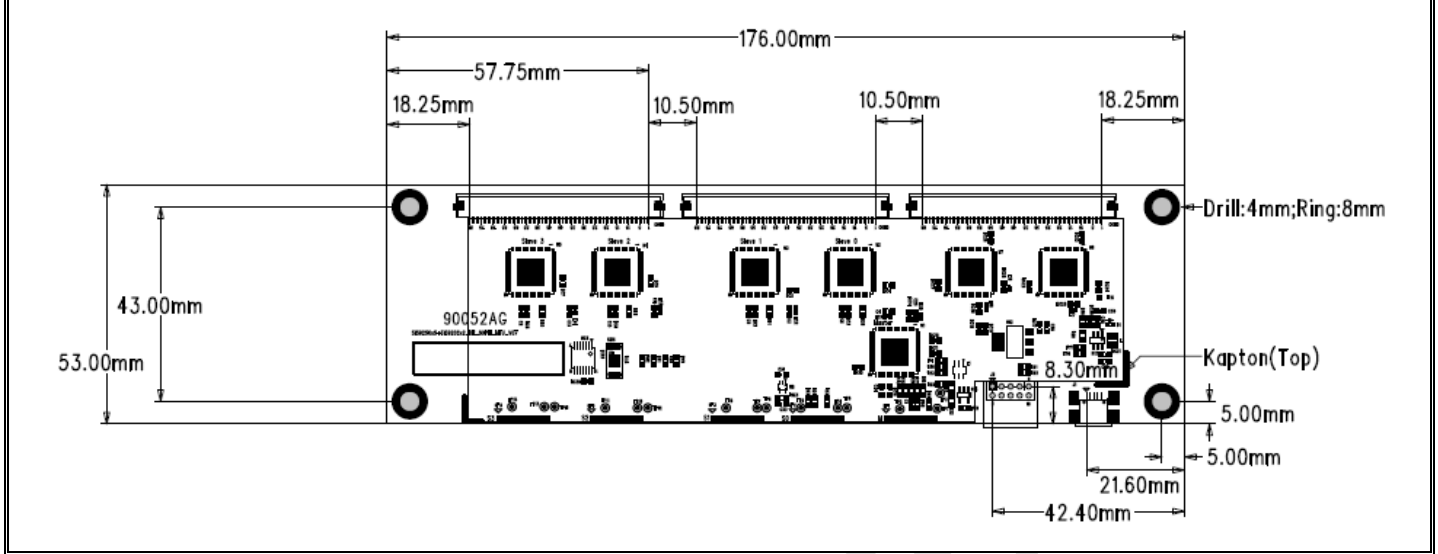
**Note :**

1. All TX channel could be defined as sensor pin or dummy pin by F/W setting, Max. TX supports 80ch.
2. All RX channel could be defined as sensor pin or dummy pin by F/W setting, Max. RX supports 142ch.
3. Applicable 80-pin FPC thickness spec. : 0.3 +/- 0.03 mm.
4. Applicable 80-pin FPC length spec. : 40.5 +/- 0.05 mm.

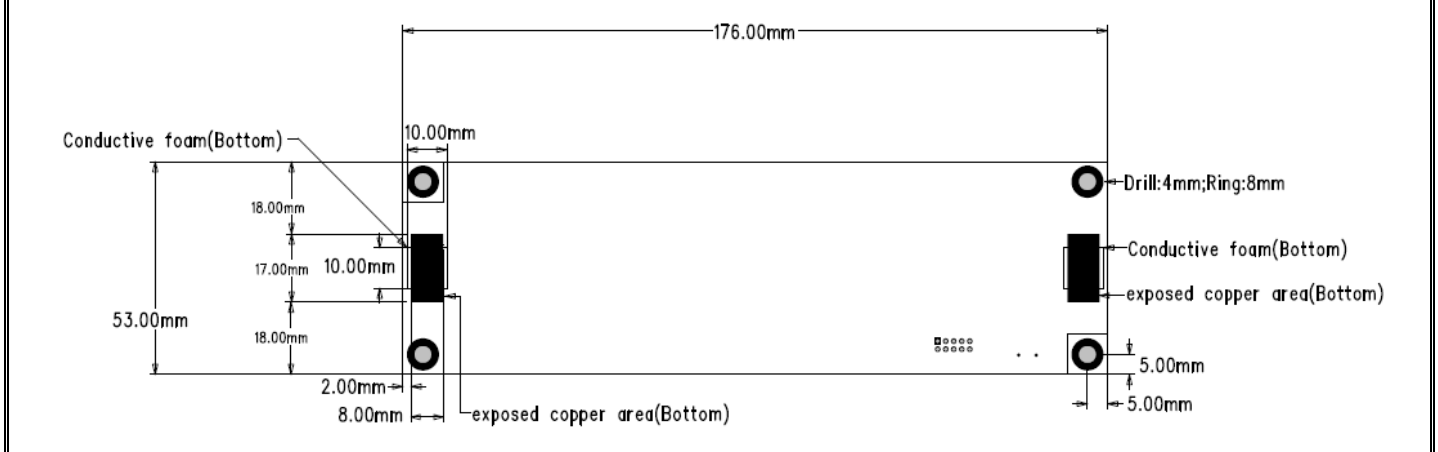


## 6. Control Board Drawing & Stacking

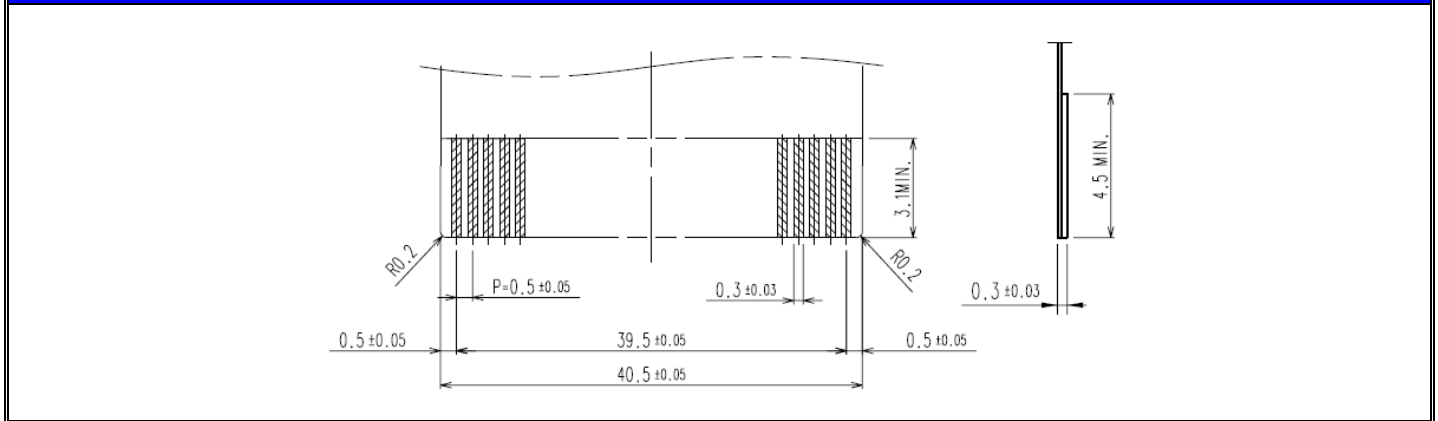
### Component Side(Top View)



### Bottom Side(Top View)

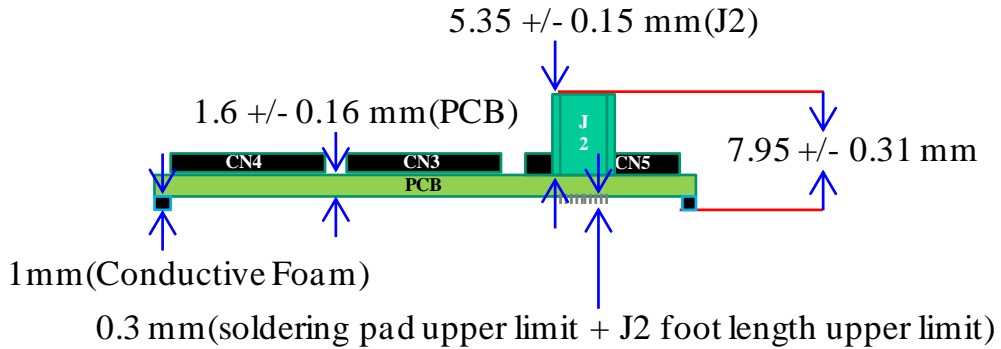


### 80-Pin FPC Recommend Size & Thickness





**COB Stacking Diagram**



<b>Dimension</b>	(176.0mm+/-0.45mm) x (53.0mm+/-0.35mm) x (7.95mm+/-0.31mm)		
<b>Stacking</b>	PCB : 1.6mm	J2 Connector : 5.35mm	Conductive Foam : 1mm
<b>Drill Hole Tolerance</b>	+/- 0.1mm		

**Note :**

0.31mm = 0.15mm(J2 height upper limit) + 0.16mm(PCB thickness upper limit)

**7. Ordering Information**

**Standard Parts**

Type : 90052AGAA-1

SiS



<b>Description</b>	<b>90052AGAA -1</b>
(1)	(1) SiS control board part number
(2)	(2) SiS internal control code



Special Parts

Type : 90052XXXXXXXXXAGAA-1

SiS



Description	90052 XX XX XX XX AGAA -1 (1a) (2) (3) (4) (5) (1b) (6)
(1a)+(1b)	SiS control board part number
(2)	Customer code or TP vendor code
(3)	F/W version
(4)	Brand name / Project name / LCD resolution
(5)	TP size
(6)	SiS internal control code

Note :

Please contact SiS sales for details if you need special parts.