



MS 函数机按键和玻璃显示测试步骤

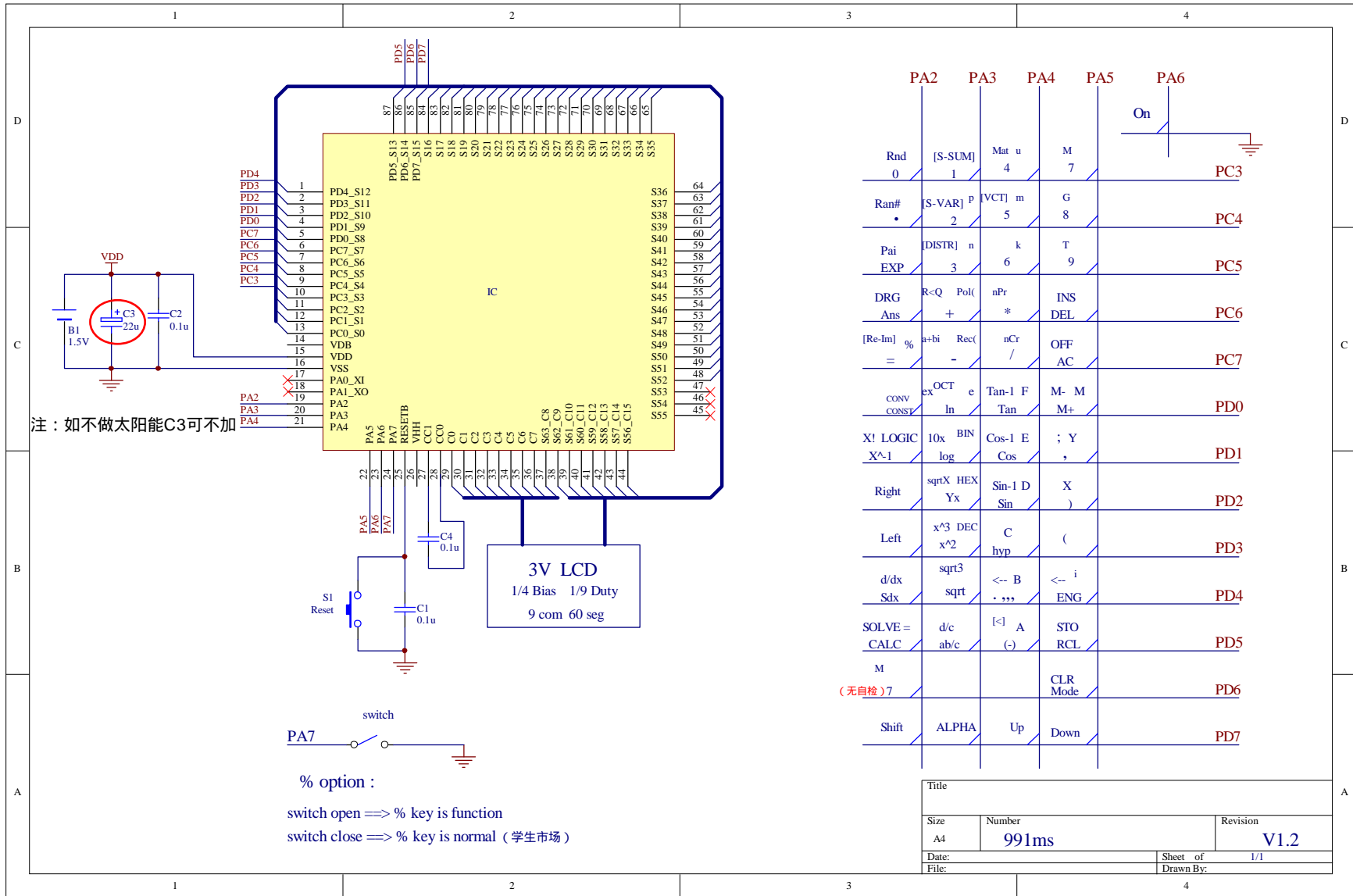
同时按下 **SHIFT**+**ON**+**7**三个按键，此时全显。再按 **SHIFT**此时全不显。继续按 **SHIFT**，每次的显示不一样。测试过程中玻璃显示的内容能判断玻璃显示是否正确,有无显示缺画等不良现象。

一直按 **SHIFT**直到显示 1。此时表示 **SHIFT**是第一个按键。按 **ALPHA**，显示 2。按 **MODE**显示 3。按 **LEFT**显示 4。按 **UP**显示 5。按 **RIGHT**显示 6。按 **X⁻¹**显示 7。按 **nCr**显示 8。按 **Pol**显示 9。按 **X³**显示 10，按 **DOWN**显示 11。按 **ab/c**显示 12。按 **√**显示 13。按 **X²**显示 14。按 **∧**显示 15。按 **log**显示 16，按 **ln**显示 17。按 **(-)**显示 18。按 **.,.,.**显示 19。按 **hyp**显示 20。按 **sin**显示 21。按 **cos**显示 22。按 **tan**显示 23。按 **RCL**显示 24。按 **ENG**显示 25。按 **(**显示 26。按 **)**显示 27。按 **,**显示 28。按 **M+**显示 29。按 **7**显示 30。按 **8**显示 31。按 **9**显示 32。按 **DEL**显示 33。按 **AC**显示 34。按 **4**显示 35。按 **5**显示 36。按 **6**显示 37。按 **×**显示 38。按 **÷**显示 39。按 **1**显示 40。按 **2**显示 41。按 **3**显示 42。按 **+**显示 43。按 **-**显示 44。按 **0**显示 45。按 **.**显示 46。按 **EXP**显示 47。按 **Ans**显示 48。按 **□**显示

25	OK
	4

按 **ON**返回正常显示，玻璃显示和按键测试结束。

注明：按键一定要按顺序一个接一个来测，不能跳开按其他键，按键顺序没按对或者按键线路没接上就无动作。

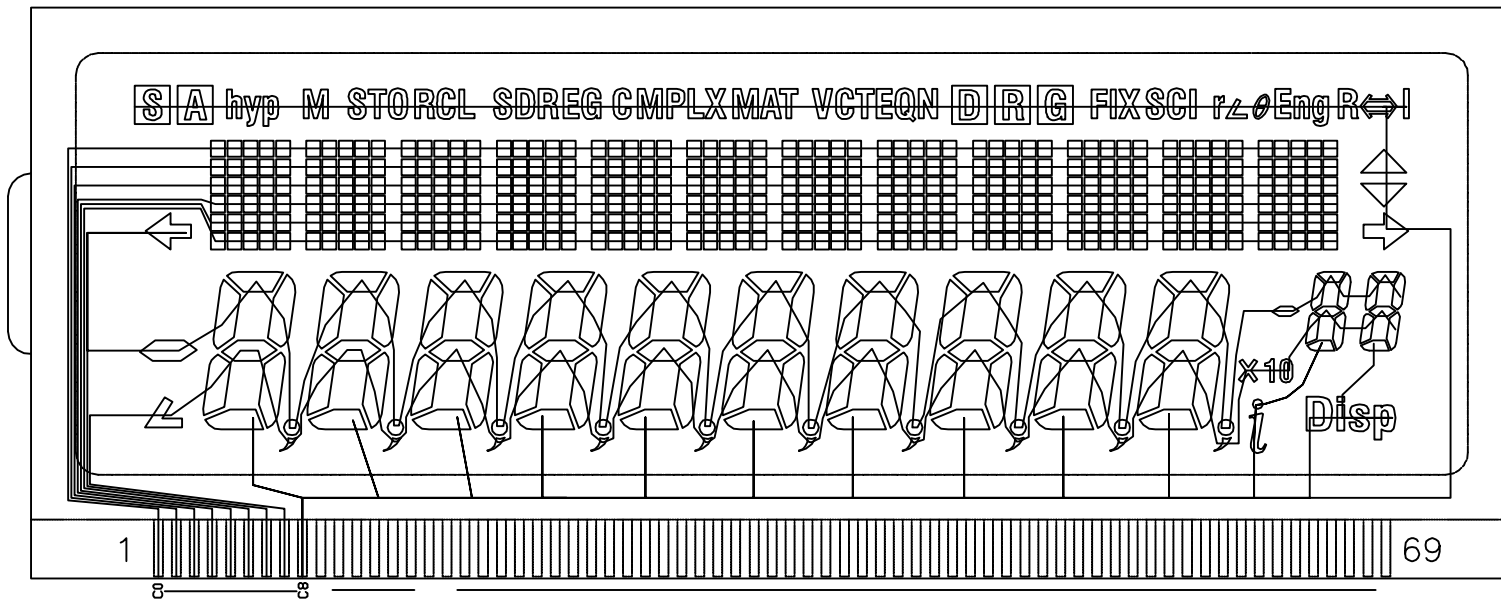


注：如不做太阳能C3可不加

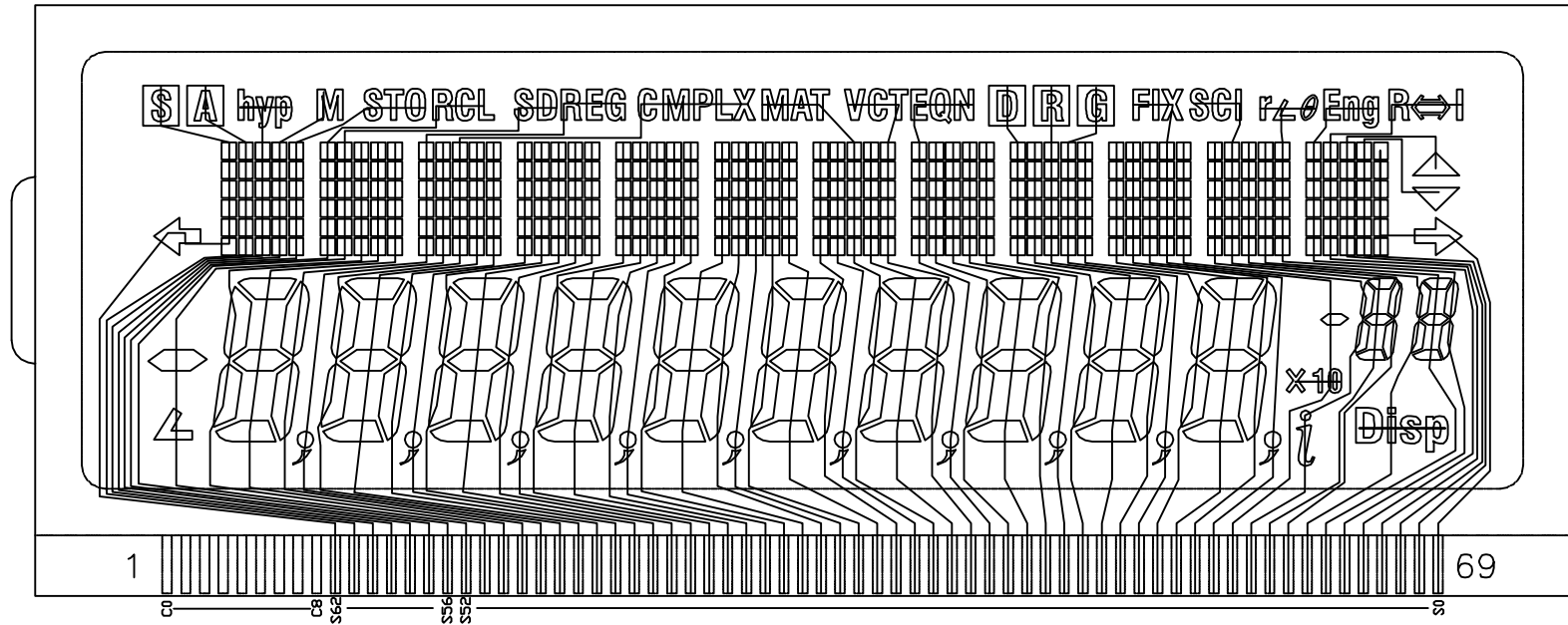
% option :
 switch open ==> % key is function
 switch close ==> % key is normal (学生市场)

	PA2	PA3	PA4	PA5	PA6	
Rnd	[S-SUM]	Mat u	M		On	PC3
Ran#	[S-VAR] p	[VCT] m	G			PC4
Pai	[DISTR] n	k	T			PC5
DRG	R<Q	Pol(INS			PC6
[Re-Im]	%	Rec(OFF			PC7
CONV	ex OCT	e	Tan-1 F	M-	M	PD0
CONV	In	Tan	M+			PD1
X! LOGIC	10x BIN	Cos-1 E	; Y			PD2
X^-1	log	Cos	,			PD3
Right	sqrtX HEX	Sin-1 D	X			PD4
Left	x^3 DEC	C	(PD5
d/dx	sqrt3	<- B	<- i			PD6
Sdx	sqrt	. ***	ENG			PD7
SOLVE =	d/c	[<] A	STO			
CALC	ab/c	(-)	RCL			
M			CLR			
(无自检)			Mode			
Shift	ALPHA	Up	Down			

Title		
Size	Number	Revision
A4	991ms	V1.2
Date:	Sheet of	1/1
File:	Drawn By:	



逻辑走线参考

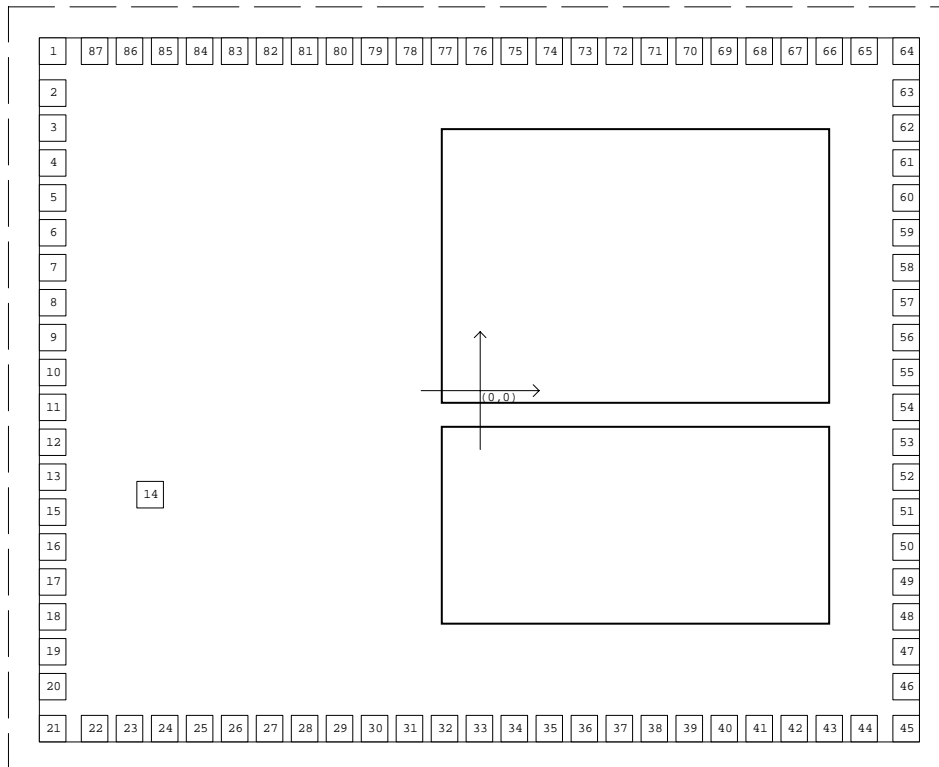


逻辑走线参考

KS991MS-1.5V Pad Assignment:

No.	Name	X	Y	No.	Name	X	Y	No.	Name	X	Y	No.	Name	X	Y
1	PD4	-1098	873	26	VHH	-630	-873	51	S49	1098	-315	76	S24	0	873
2	PD3	-1098	765	27	CC1	-540	-873	52	S48	1098	-225	77	S23	-90	873
3	PD2	-1098	675	28	CC0	-450	-873	53	S47	1098	-135	78	S22	-180	873
4	PD1	-1098	585	29	C0	-360	-873	54	S46	1098	-45	79	S21	-270	873
5	PD0	-1098	495	30	C1	-270	-873	55	S45	1098	45	80	S20	-360	873
6	PC7	-1098	405	31	C2	-180	-873	56	S44	1098	135	81	S19	-450	873
7	PC6	-1098	315	32	C3	-90	-873	57	S43	1098	225	82	S18	-540	873
8	PC5	-1098	225	33	C4	0	-873	58	S42	1098	315	83	S17	-630	873
9	PC4	-1098	135	34	C5	90	-873	59	S41	1098	405	84	S16	-720	873
10	PC3	-1098	45	35	C6	180	-873	60	S40	1098	495	85	PD7	-810	873
11	PC2	-1098	-45	36	C7	270	-873	61	S39	1098	585	86	PD6	-900	873
12	PC1	-1098	-135	37	S63	360	-873	62	S38	1098	675	87	PD5	-990	873
13	PC0	-1098	-225	38	S62	450	-873	63	S37	1098	765				
14	BAT_VDD	-847.12	-270	39	S61	540	-873	64	S36	1098	873				
15	VDD	-1098	-315	40	S60	630	-873	65	S35	990	873				
16	VSS	-1098	-405	41	S59	720	-873	66	S34	900	873				
17	PA0	-1098	-495	42	S58	810	-873	67	S33	810	873				
18	PA1	-1098	-585	43	S57	900	-873	68	S32	720	873				
19	PA2	-1098	-675	44	S56	990	-873	69	S31	630	873				
20	PA3	-1098	-765	45	S55	1098	-873	70	S30	540	873				
21	PA4	-1098	-873	46	S54	1098	-765	71	S29	450	873				
22	PA5	-990	-873	47	S53	1098	-675	72	S28	360	873				
23	PA6	-900	-873	48	S52	1098	-585	73	S27	270	873				
24	PA7	-810	-873	49	S51	1098	-495	74	S26	180	873				
25	RESETB	-720	-873	50	S50	1098	-405	75	S25	90	873				

*The IC substrate should be connected to Vss in the PCB layout artwork.



Absolute Maximum Ratings

Supply Voltage -0.3V~4.0V

Storage temperature -50°C~125°C

Input Voltage $V_{SS}-0.3V\sim V_{DD}+0.3V$

Operation temperature 0°C~70°C

(Commercial Grade)

DC Characteristics

TA=25°C

Symbol	Parameter	V _{DD}	Conditions	Min.	Typ.	Max.	Unit
V _{DD1}	Operating Voltage 1		F _{CPU} =F _{OSC} /1	0.9	1.5	2.0	V
V _{H1}	VHH external high voltage		VHH ≥ VDD	2.4	-	3.6	V
F _{OSC-var}	Main RC oscillator frequency variation	1.5V	V _{DD} =0.9V ~ 2.0V	-	-	20	%
F _{BR35K-Var}	Sub RC oscillator frequency variation	1.5V	V _{DD} =0.9V ~ 2.0V	-	-	30	%
I _{DD1}	Operating Current 1	1.5V	No load F _{CPU} =900KHz	-	140	-	uA
I _{DD2}	Operating Current 2	1.5V	F _{OSC} OFF F _{CPU} = F _{ext} (BR35KHz or XT32K weak) LCD OFF No load	-	12	-	uA
I _{DD3}	Operating Current 3	1.5V	No load, System HALT F _{CPU} = F _{ext} = XT32K (weak mode) LCD OFF, LVR OFF	-	1	-	uA
I _{STB1}	Standby Current 1	1.5V	No load, System HALT, LVR OFF	-	-	1	uA
I _{STB2}	Standby Current 2	1.5V	No load, System HALT, LVR ON	-	0.5	-	uA
I _{OH1}	I/O Port Source Current (PA, PD)	1.5V	V _{OH} =0.9V _{DD}	-	-0.5	-	mA
I _{OL1}	I/O Port Sink Current (PA, PD)	1.5V	V _{OL} =0.1V _{DD}	-	1.0	-	mA
I _{OH2}	I/O Port Source Current (PC)	1.5V	V _{OH} =0.9V _{DD}	-	-0.5	-	mA
I _{OL2}	I/O Port Sink Current (PC)	1.5V	V _{OL} =0.1V _{DD}	-	1.0	-	mA
R _{PH1}	PA, PC, PD Pull-high R	1.5V	-	-	300	-	KΩ
R _{PH2}	Reset Pull-high R	1.5V	-	-	300	-	KΩ
V _{IL}	Input Low Voltage for input port	1.5V	-	-	-	0.5	V
V _{IH}	Input High Voltage for input port	1.5V	-	1	-	-	V

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