



義隆電子 觸控家電發展與解決方案

2010/8/5

內容

1. 觸控 客廳家電
2. 觸控 廚房家電
3. 觸控 辦公室家電
4. 觸控解決方案介紹
5. 討論

1. 觸控 客廳家電



LCD TV Touch eKT4102/4701

6~10 Buttons+6~10LEDs

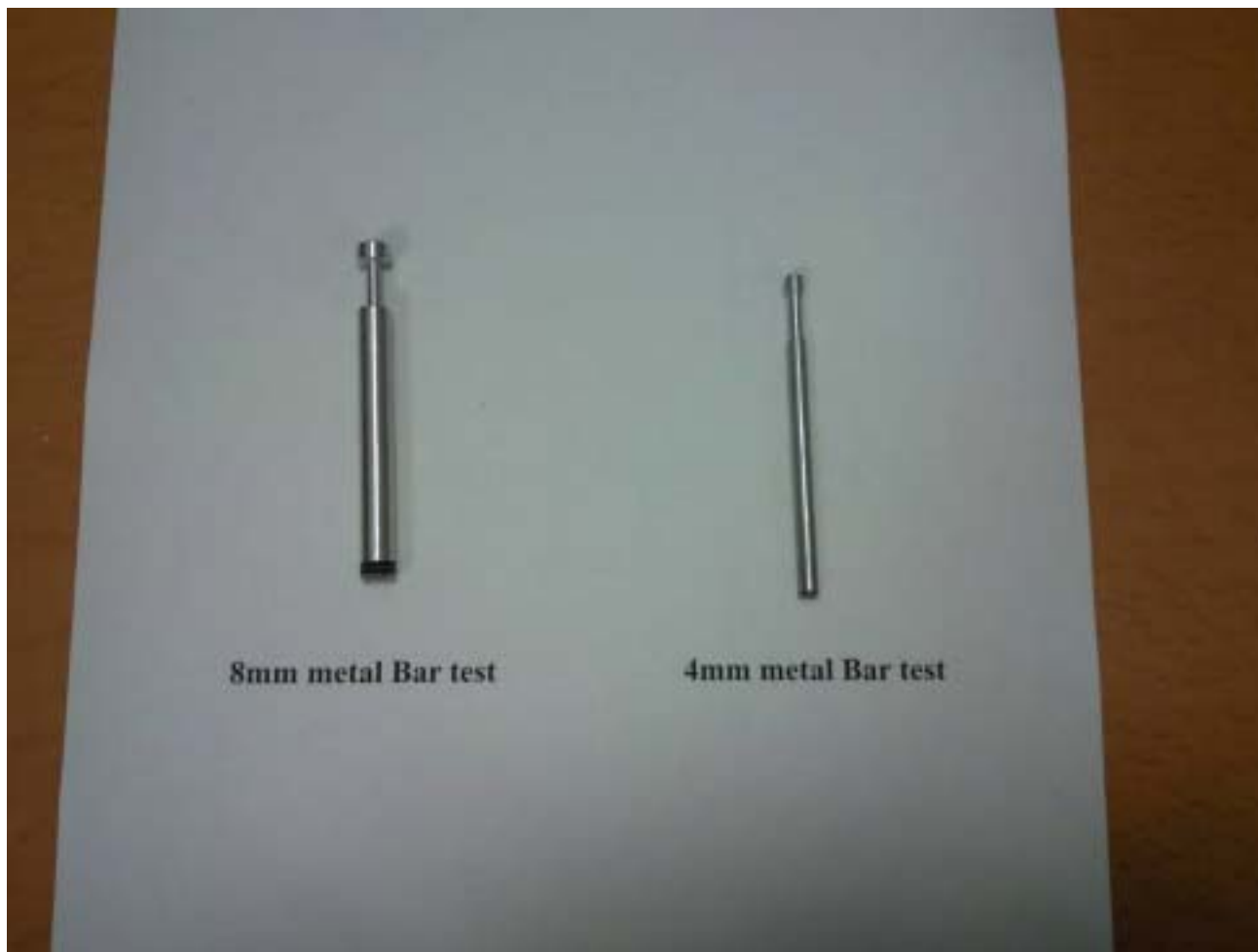


Proximity Function:5CM

Approved by Samsung's TV/Monitor/DPF

No	Item	Spec
1	Workprocess of Function(Set) Make working process and match working scenario?	Inculde Working Scenario & matched
2	Sensitivity Test(Set)	
	8mm metal Bar test	100% working
	4mm metal Bar test	100% no working
3	Radiotelegraph test	通過高功率抗幅射干擾
	RS tolerant test : 80Mhz-1Ghz, 5V/m, 80% AM(1Khz)	
	Radiotelegraph test: Test equipment : 4.8W 400Mhz, 20W 400Mhz	
	Test Condition : stay antenna conection on IC, total 10times, send/receive action every 1sec	
4	ESD test(Ass'y): contact test, 1time/1sec, total 10sec	通過高抗雜訊干擾
	IR board : conact test on IR output port, over 25Kv	
	Touch Board : contact test on touch PAD, over 8KV	
5	Temperature test(Ass'y)1	Set or Jig equipment test, working
	Temp step : -20 ~-60 , working test at every 10'C(up/donw) arrival time & alone time is over 30min	
	Thermal shock test	Set or Jig equipment test, working
	85'C, -25'C, 20cycle, alone 30min,	
	Temperature test(Ass'y)2	
	keep set on -25'C for 30min, move set outside and test within 10sec	
6	Electronics Sepcification(Ass'y)(Normal & walky talky testing)	通過20W 對講機干擾測試

手指模擬金屬棒



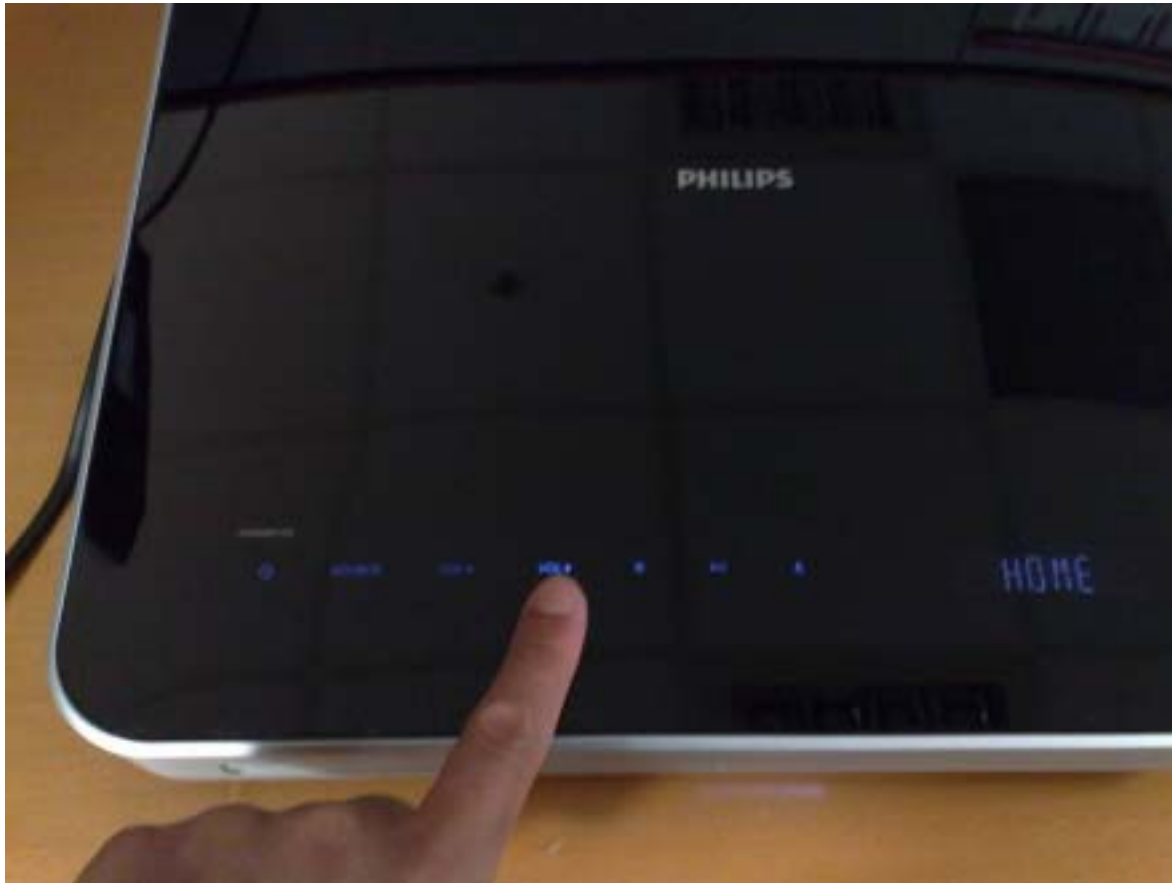
DPF Touch Approved by Samsung ***6~10 Buttons+6~10LEDs***



Touch Digital Cordless Phone 11~21 Buttons+11~21LEDs



Approved by Philip's DVD Player 7~9 Buttons+7~9LEDs



Boom Box 1

7~9 Buttons+7~9LEDs



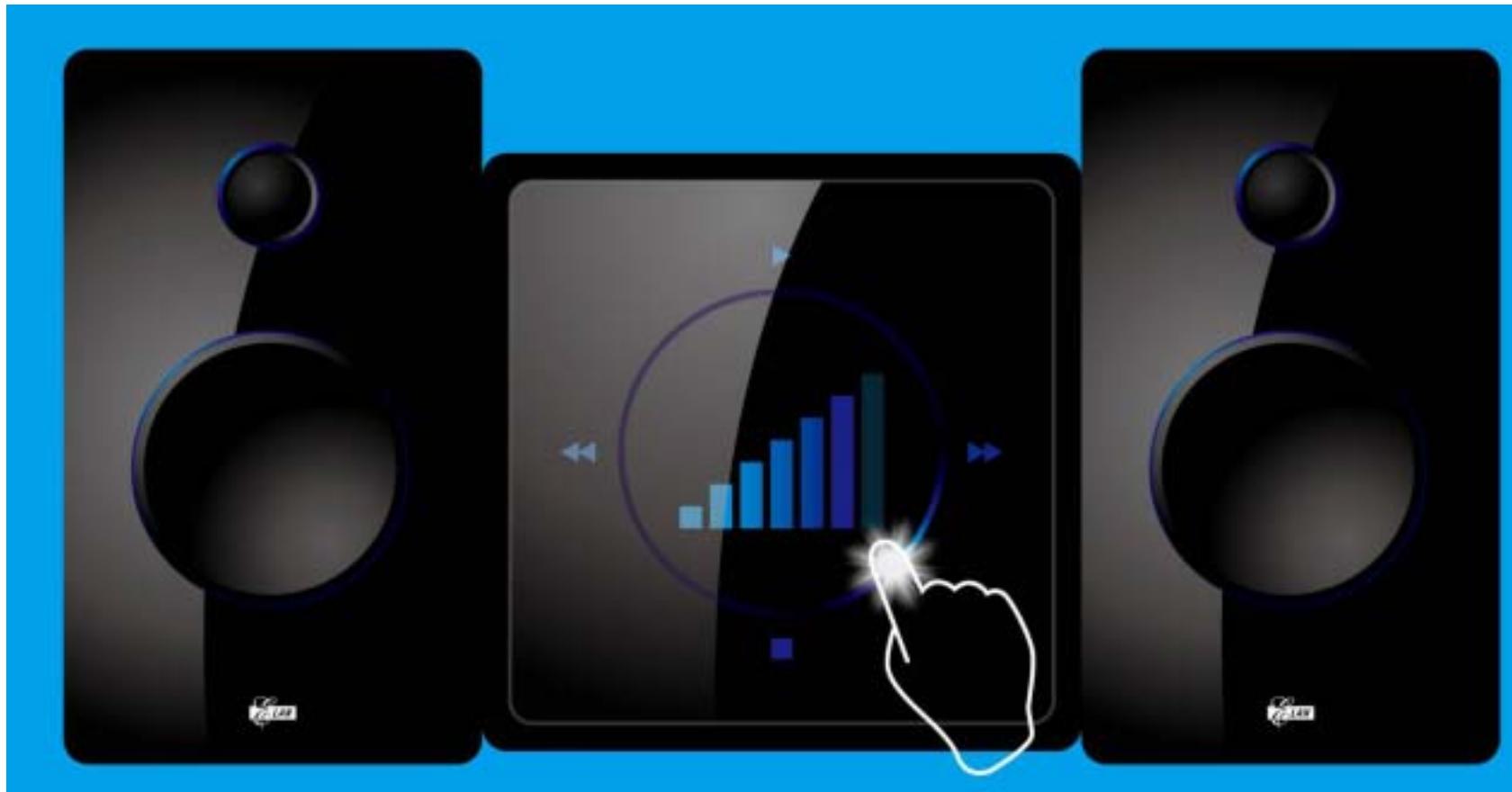
EASYTECH

PHILIPS

sense and simplicity

Boom Box 2

Scrolling + Slider



Touch Remote



Approved by MR. Coffee *7~9 Buttons+7~9LEDs*



要求防水
抗干擾特性





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2. 觸控廚房家電



冰箱觸控面板



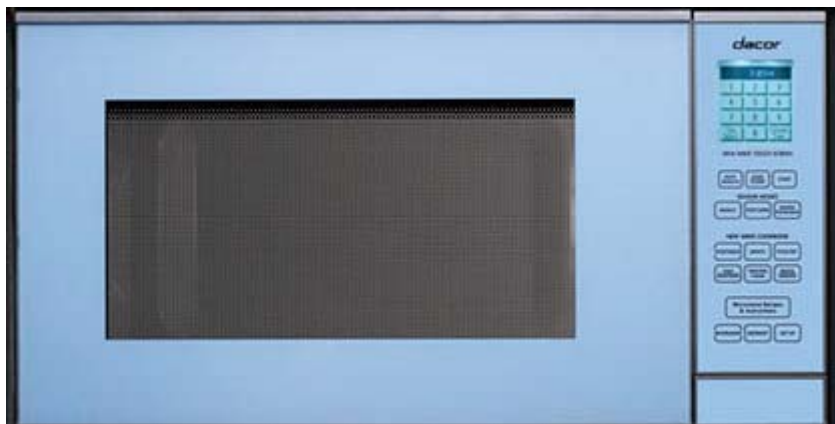
排煙機觸控



觸控電磁爐



WW 微波爐觸控面板



洗衣機觸控面板



Function: 8~12 Buttons+ 1Scrolling(12 Buttons)

Function: 13 Buttons

電熱水器觸控



3. 觸控 辦公室家電



LCD Monitor Touch Approved by Samsung

6~10 Buttons+6~10LEDs



Proximity Function:5CM



1D Applications of KB/MOUSE

Chicony



*Media Keyboard
with Smart Pad*

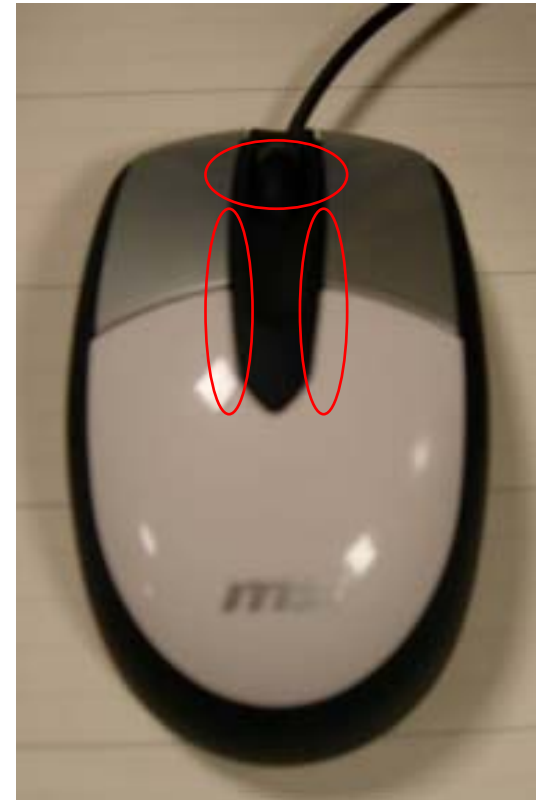
ADOMAX™

亞士科技股份有限公司
ADOMAX TECHNOLOGY CO.,LTD.



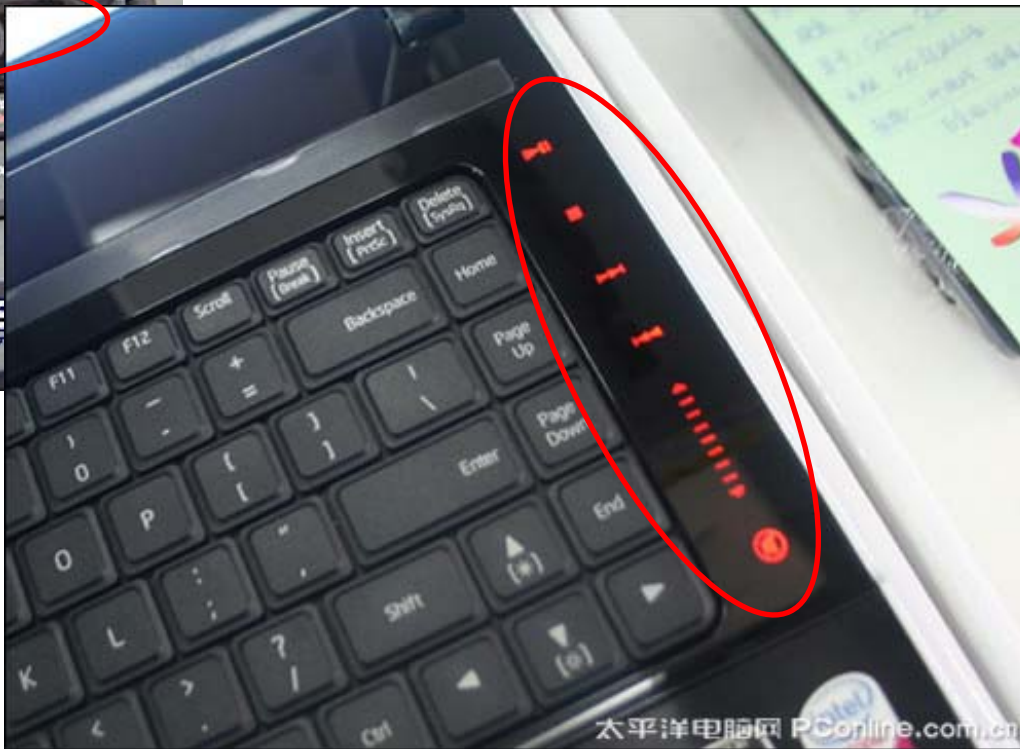
*Touch Sense
Mouse*

Touch sense Mouse 3~10Buttons+LEDs



Notebook MMB

3~10Buttons+1Slider+LEDs



***Printer Touch sense panel
6 Buttons+6LEDs
Approved by HP***



Portable Device Scrolling/3~10 Buttons



Bx



鼎X



Brand Customer List

PANDIGITAL®

Moving Digital Images Out Of Your Camera And Into Your Home.



vtech



PHILIPS



MR. COFFEE®

4. 觸控解決方案介紹

eKT4701 Touch Key PCB(正面)



(1) 6 Touch Key for Monitor (正面)



(2) 9 Touch Key + 9 LED for DPF (正面)

eKT4701 Touch Key PCB(反面)

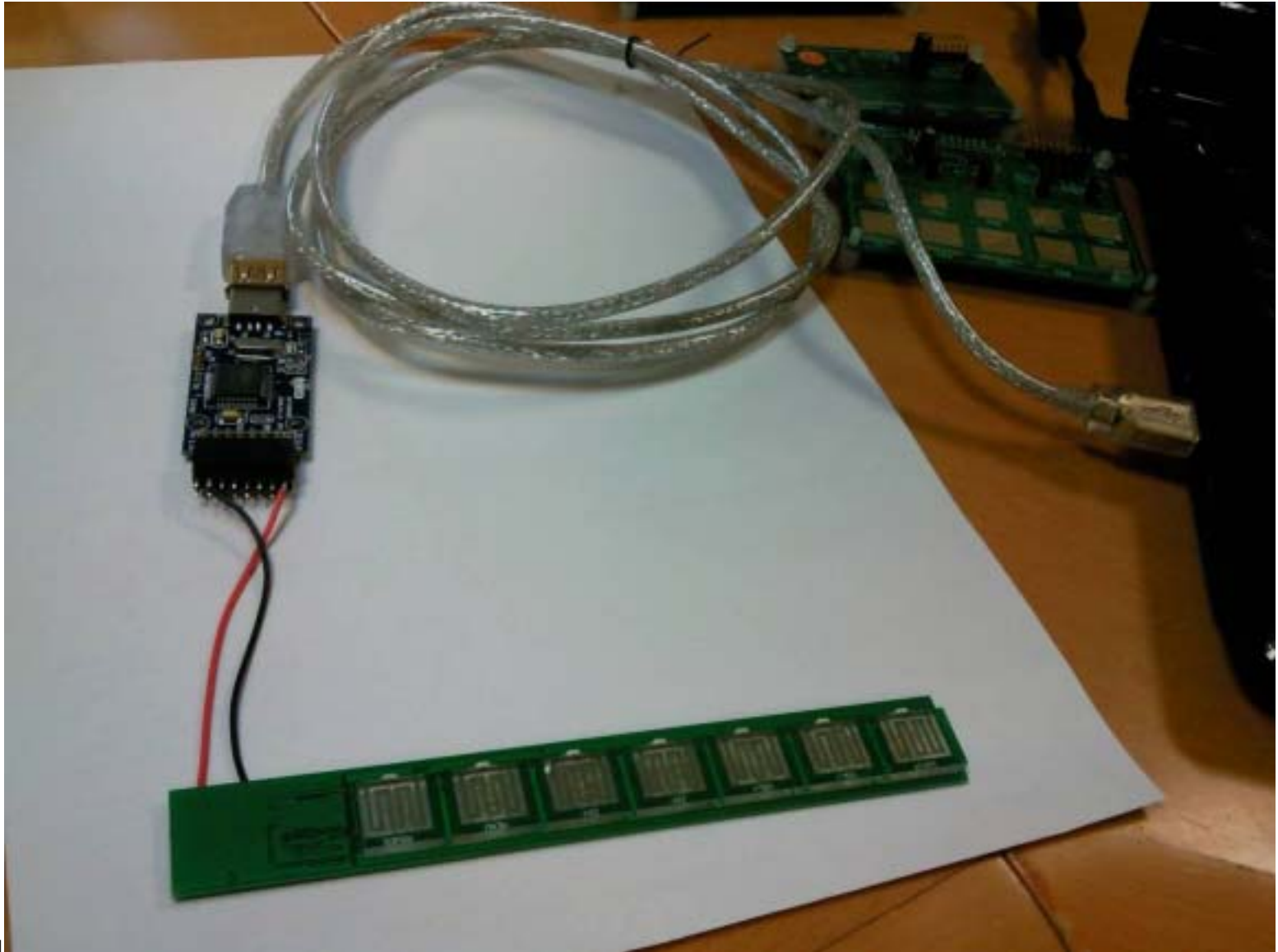


(1) 6 Touch Key for Monitor (背面)

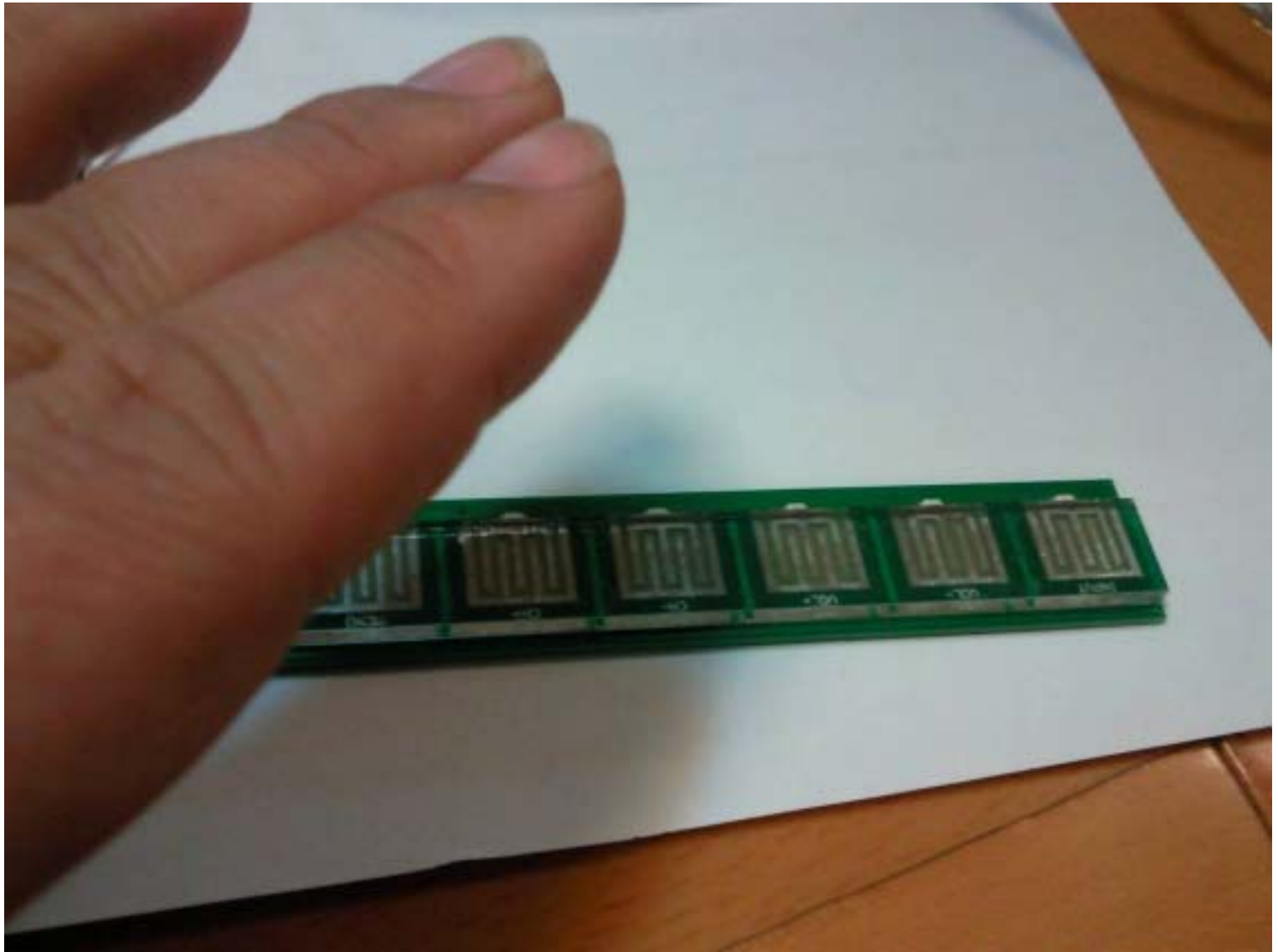


(2) 9 Touch Key + 9 LED for DPF (背面)

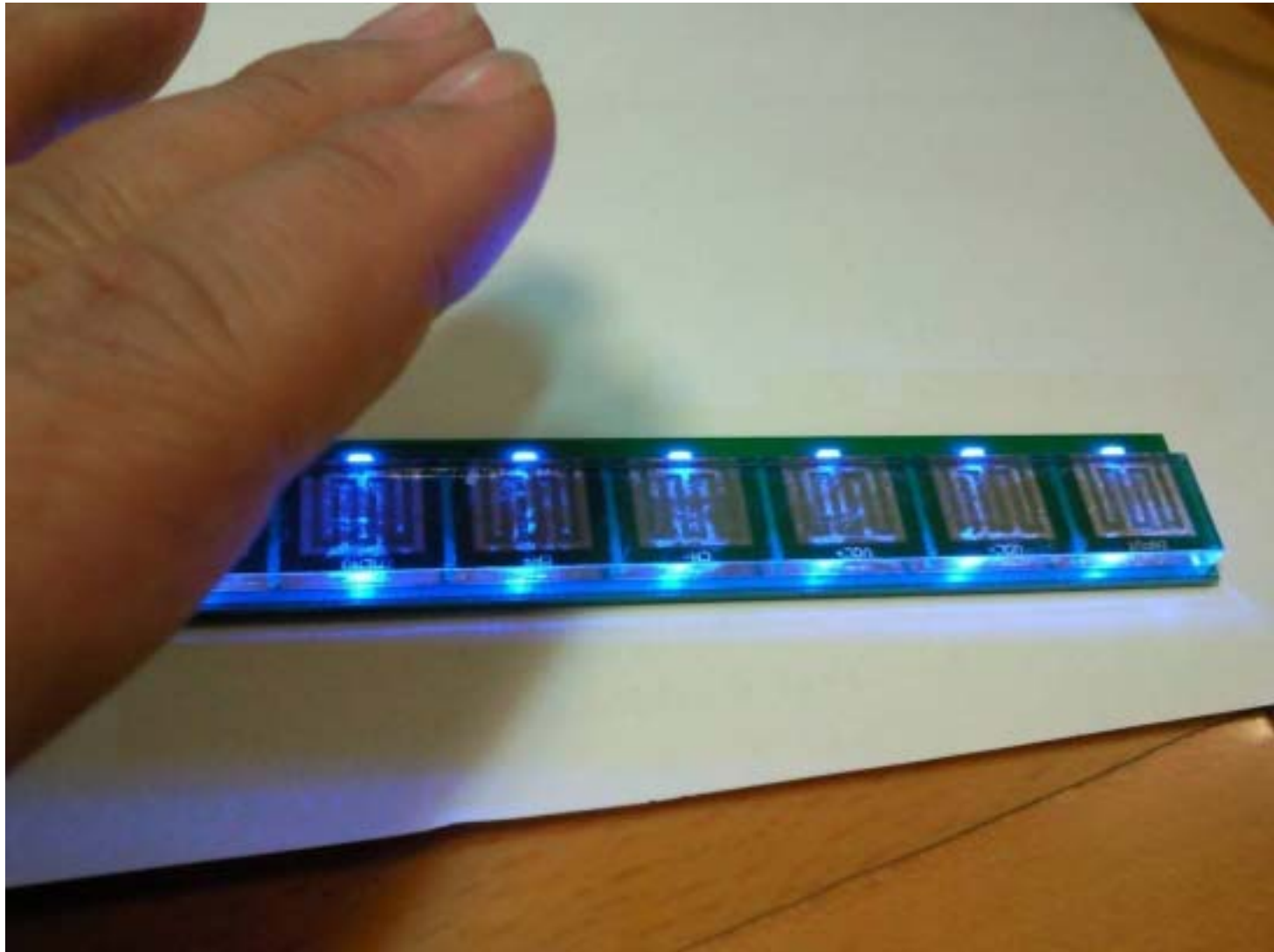
eKT4711 Proximity Demo



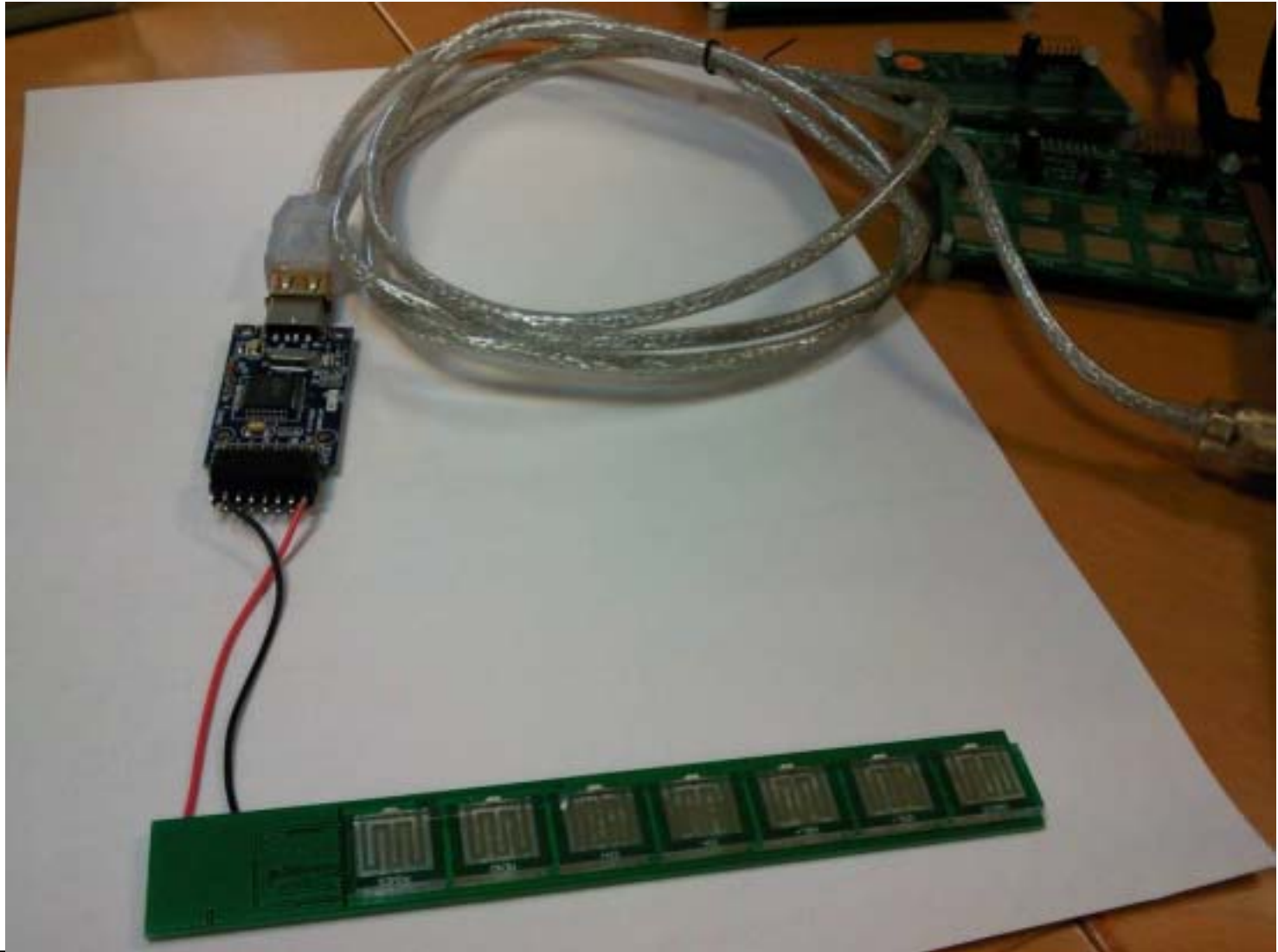
eKT4711 Proximity Demo



eKT4711 Proximity Demo



eKT4711 Proximity Demo



Button

eKT4701

eKT4102

eKT4003

eKT2201

Sliders

Proximity

2010/6 第一階段 Release 4 Type

第一階段 Features

	eKT F 4701	eKT4102	eKT4003	eKT2201
Voltage	3V ~ 5.5V			3V ~ 5.5V
DC drop	< 50mV			< 50mV
AC ripple	<200mVp-p			<200mVp-p
耗電	Normal: < 3mA Idle: < 450uA Slep: < 2uA	Normal: < 3mA Idle: < 250uA Slep: < 2uA	Normal: < 3mA Idle: < 100uA Slep: < 2uA	Normal: < 2mA Idle: < 170uA Slep: < 2uA
Buttons (Package)	12 (QN32)	10 (QN32)	2 ~ 4 (MS10)	5 ~ 10 (QN16) 4 ~ 8 (SO14) 2 ~ 4 (MS10)
Output pin	12	10	2 ~ 0	5 ~ 0/ 4 ~ 0/2 ~ 0
Out dimming	Yes			No
Host Interface	I2C (slave)			I2C (slave)
ROM type	Flash	OTP	OTP	OTP
應用產品	LCD TV/Monitor DPF,DVD Player Set Top Box	LCD TV/Monitor DPF,DVD Player Set Top Box,風扇	MP3/MP4,檯燈,牆 壁開關,風扇,	MP3/MP4,電話機, 網路收音機,數位廣 播

第一階段 Mechanical suggestion

	eKT F 4701	eKT4102	eKT4003	eKT2201
Cover 厚度 at pad 10 *10 mm	< 4mm (plastic)	< 5mm (plastic)	< 4mm (plastic)	< 10mm (plastic) @ Vcc=5V
按鍵最小面積 (for 1mm cover)	> 6x6mm			> 2x2mm
中間穿孔	LED 開孔面積 < 30% pad size			
PCB pad	Interlaced			Single pad
PCB 鋪地	正面鋪 40% 反面不鋪地			正面鋪 60~100% Pad 反面 40%, 其餘鋪 60~100%

第一階段 Noise immunity related

	eKT4701	eKT4102	eKT4003	eKT2201
防水測試	水霧,水珠			水霧,水珠, 積水< 1mm
ESD (HBM@ system) *	> 8KV	> 8KV	> 8KV	> 8KV
ESD (HBM@ chip)	5KV	4KV	6.5KV	6KV
EFT (AC Line level)	+/- 4.0KV	+/- 3.0KV	商規等級	NA
CS test (IEC61000-4-6)	Level2 (3V) / 0.15~80MHz			NA
RS test (IEC61000-4-3)	80MHz~1GHz / 5V/m / 80% AM(1KHz)			NA
終端產品 應用電源	AC / DC	AC / DC	AC / DC	DC only/ Battery

* provide appropriate protection in system

Button

eKT4801

eKT4701

eKT4102

eKT4003

eKT2201

Sliders

eKT4103

eKT2203

Proximity

eKT4711

2010/8 第二階段 Release 4 Type

第二階段 Type Features

	eKTF4801	eKTF4711	eKT4103	eKT2203
Voltage	3V ~ 5.5V	3V ~ 5.5V	3V ~ 5.5V	3V ~ 5.5V
DC drop	< 50mV	< 50mV	< 50mV	< 50mV
AC ripple	<200mVp-p	<200mVp-p	<200mVp-p	<200mVp-p
Buttons (Package)	15~25 (QN32)	7 (QN32)	7 ~ 5 (QN32)	6~2 (QN16)
Output pin	12	7	7 ~ 5	1
Proximity	(for eKTF4811)	Yes (5~8cm)	x	x
Slider	(for eKTF4803)	x	1 Slider (3~5Btn)	1 Slider (4~8Btn)
Slider step	(for eKTF4803)	x	8 ~ 32 Steps	8 ~ 32 Steps
Host Interface	I2C (slave)	I2C (slave)	I2C (slave)	I2C (slave)
ROM type	Flash	Flash	OTP	OTP

TP Development System Tools 使用開發 4 步驟

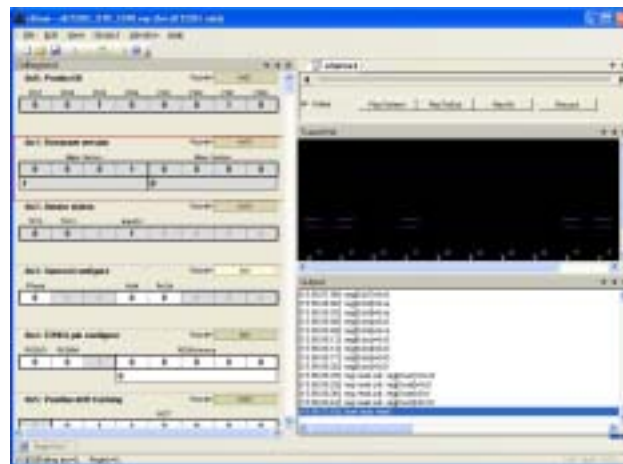
Step I: 調 TP 參數

- Development Tool:
 - eSense IDE
 - Demo Board
 - eKTUSBRGExA
 - USB cable



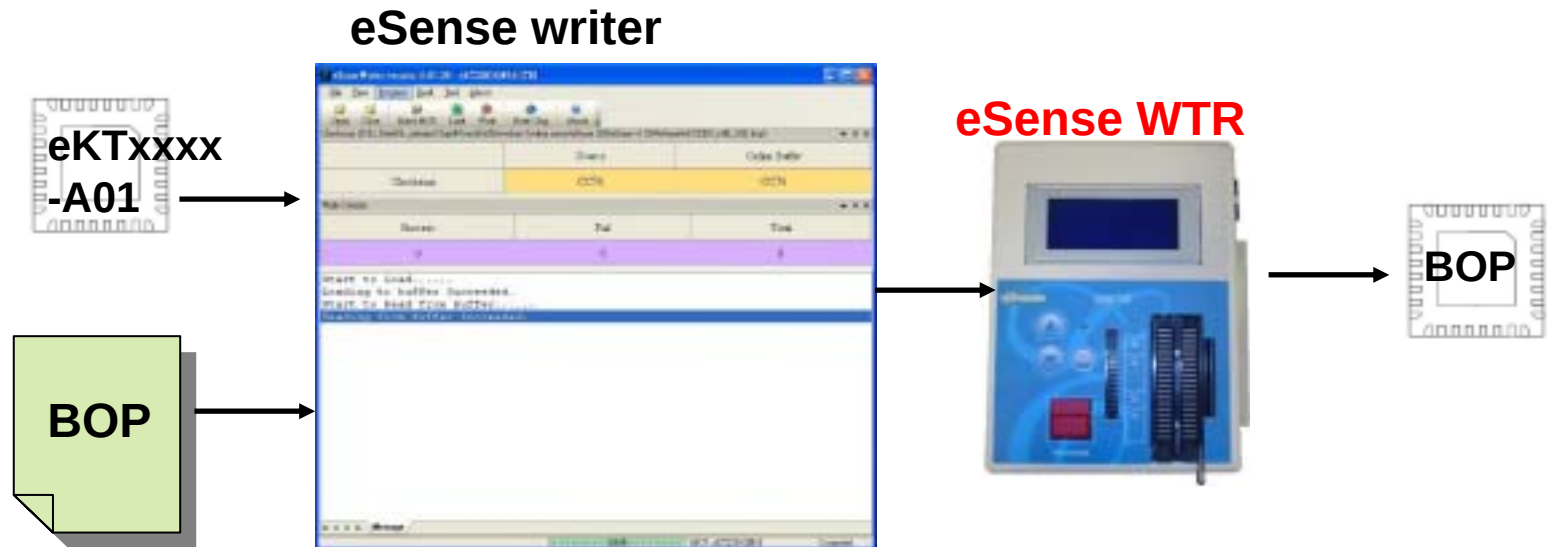
Step II: Fine turn with customer's PCB

- Development Tool:
 - eSense IDE
 - eKTUSBRGExA
 - USB cable
 - Customer's PCB & Environment
 - eKTxxxx standard IC chip



Step III

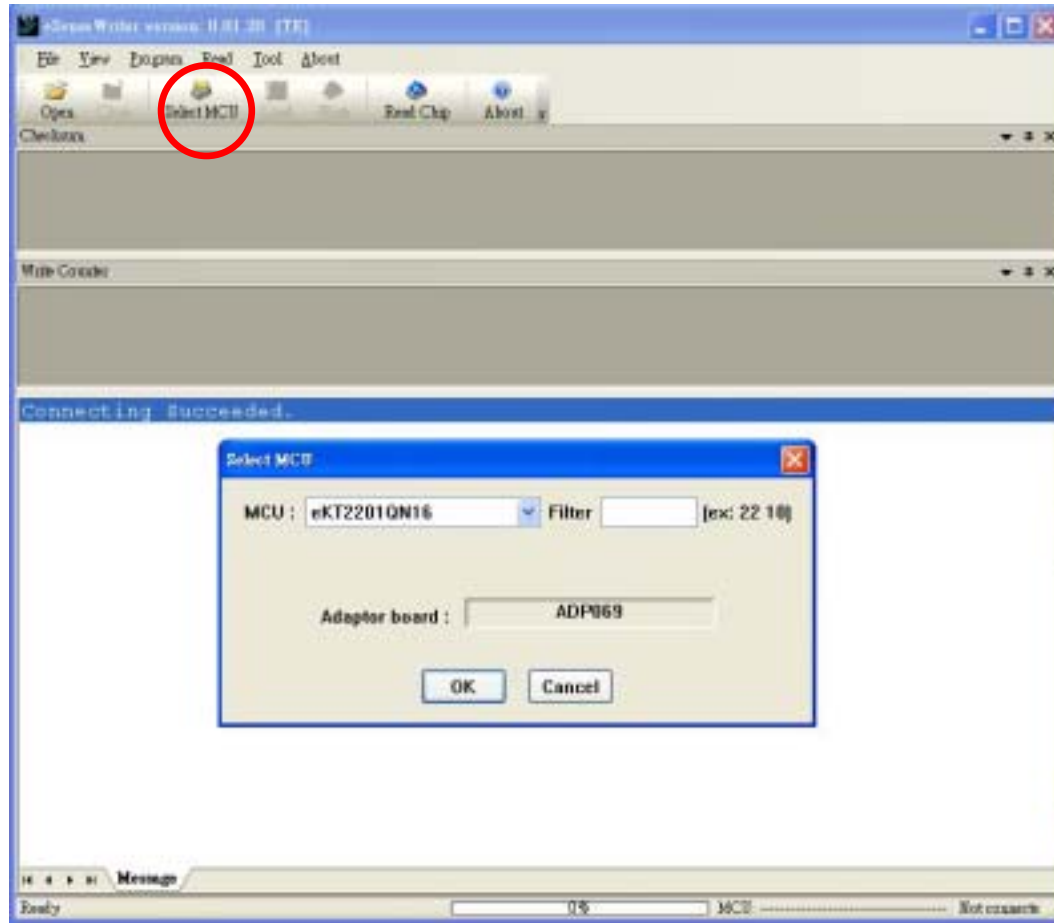
- sample & Pilot run



Step III: sample & Pilot run

- Development Tool:
 - eSense Writer S/W
 - eSense Writer H/W
 - applicable UWTR-ADPxxx Board
 - applicable SMT socket Board
 - eKTxxxx standard IC chip
 - Customer's PCB & Environment

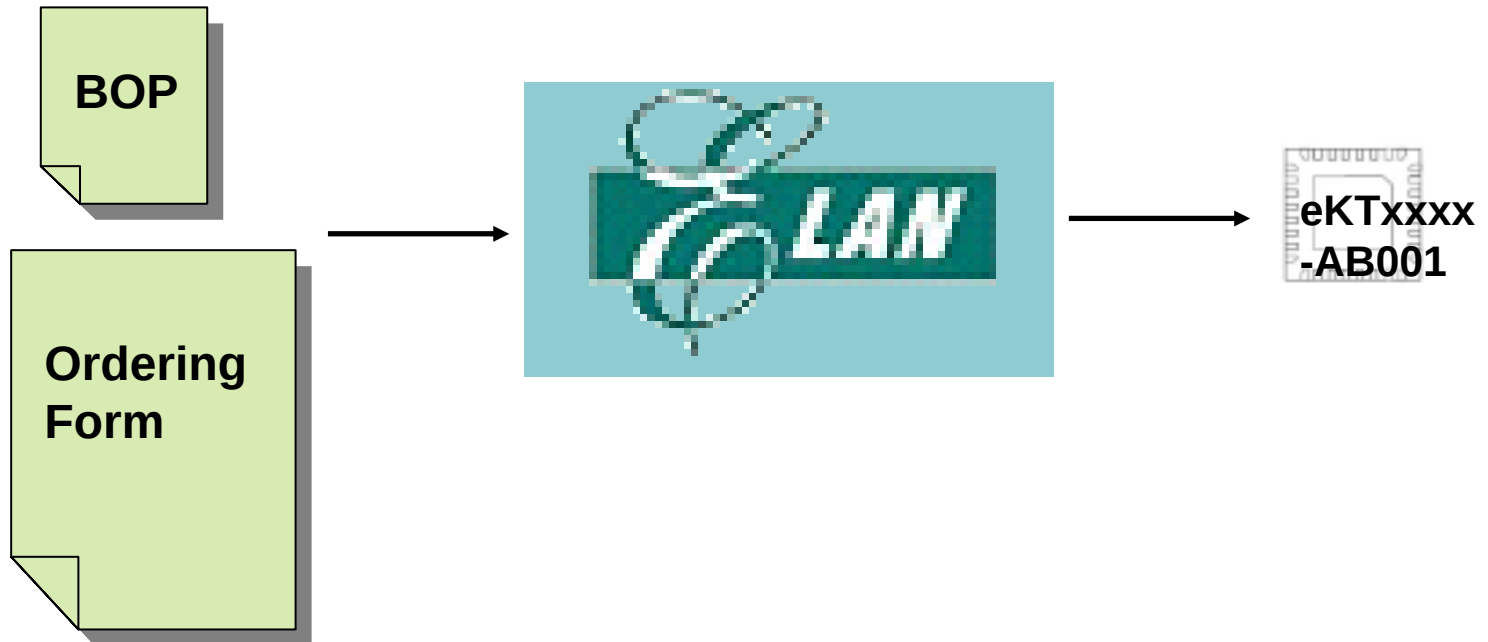
StepIII-1:link the eSense Writer



- Select applicable eKT chip & package

Step IV

- SQTP



Step IV: SQTP

- Provide the .BOP file data
- Provide the eKTxxxx standard IC EM NO.
- Approval Form + custom code number

Elan support write the code data to
OTP chips