DCC

Digital Contact Controller

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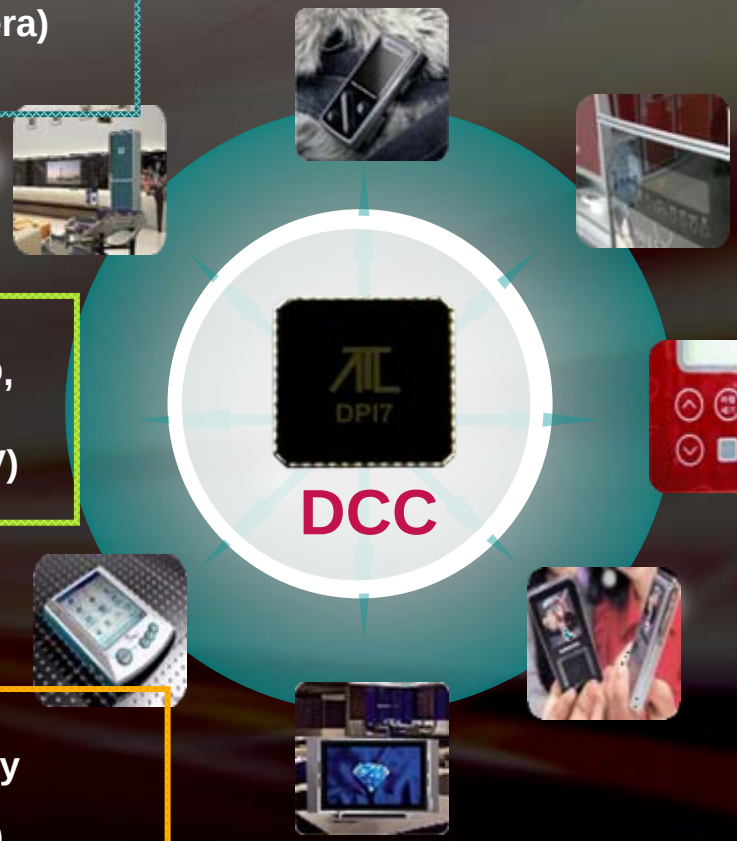
Applications

Portable Electronics (MP3, Mobile Phone, PMP, PDA, Camera)

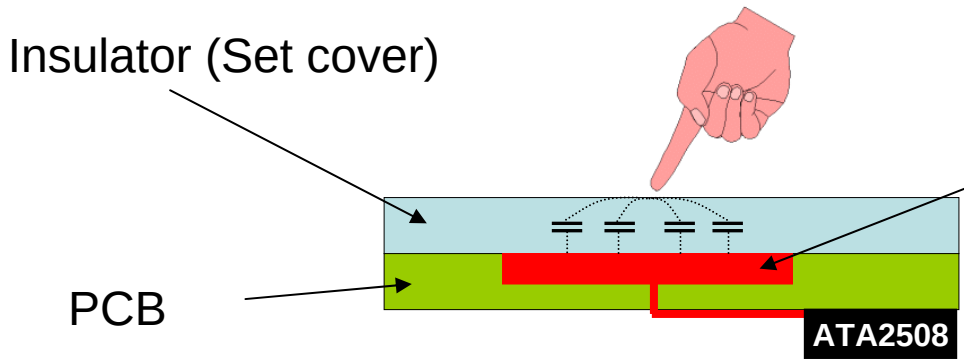
Home Electronics (TV, DVD, Air conditioner, Refrigerator, Micro oven, LCD, Door Lock, AV)

Office & Others (Fax, Copy Machine, ATM, Control Panel)



The Principle of Capacitive Touch

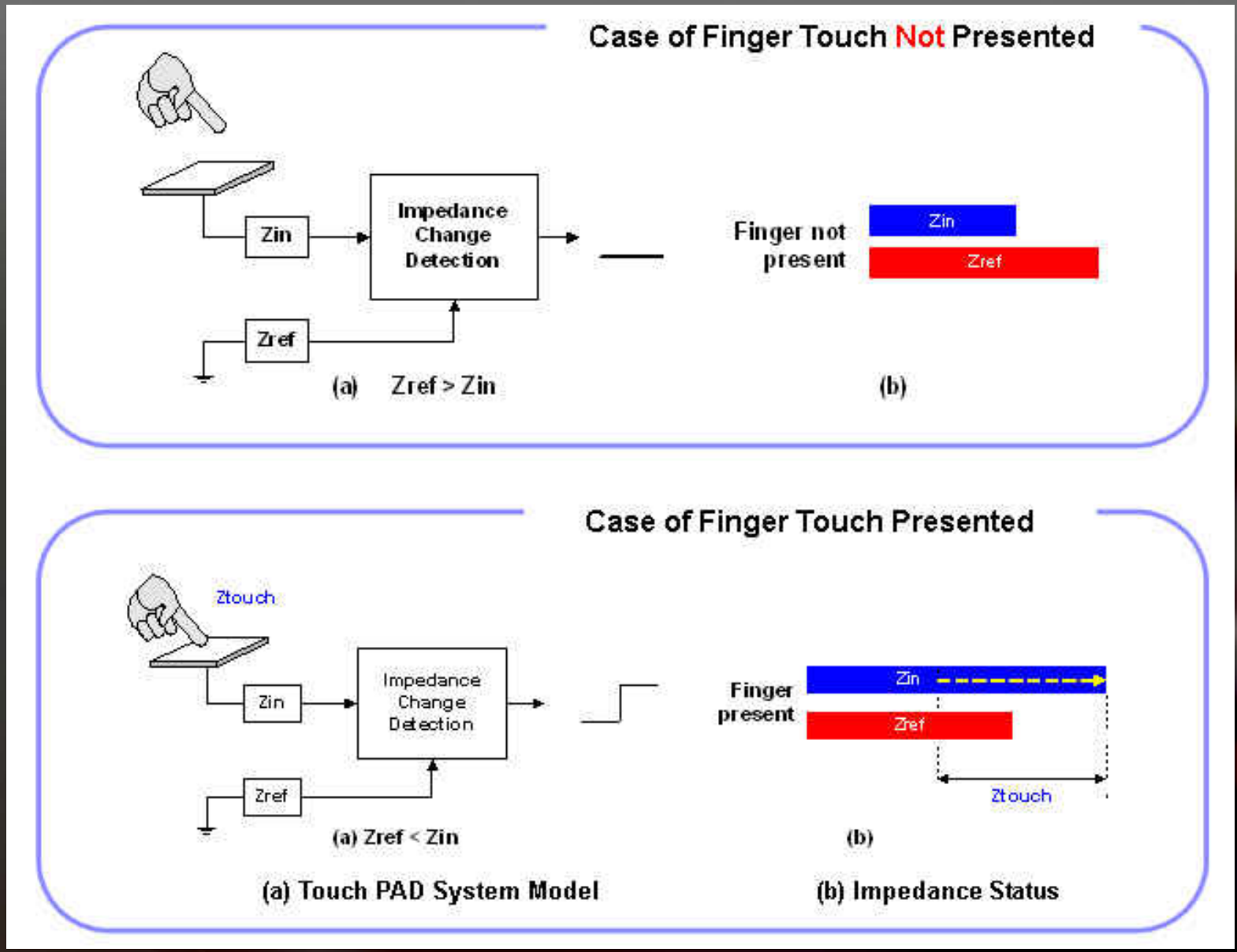
- **Allow design flexibility**:
  - Free from pad size, pad location, cover thickness, PCB variation
  - Capable of on-board, not on additional board
- **Result in same sensitivity all the time**



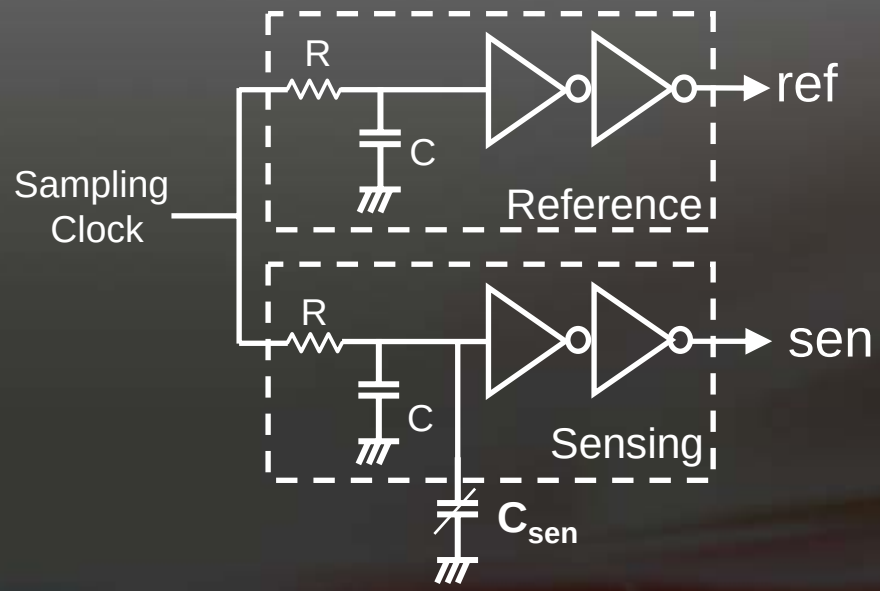
$$C_{Touch} = \varepsilon \frac{A}{D}$$

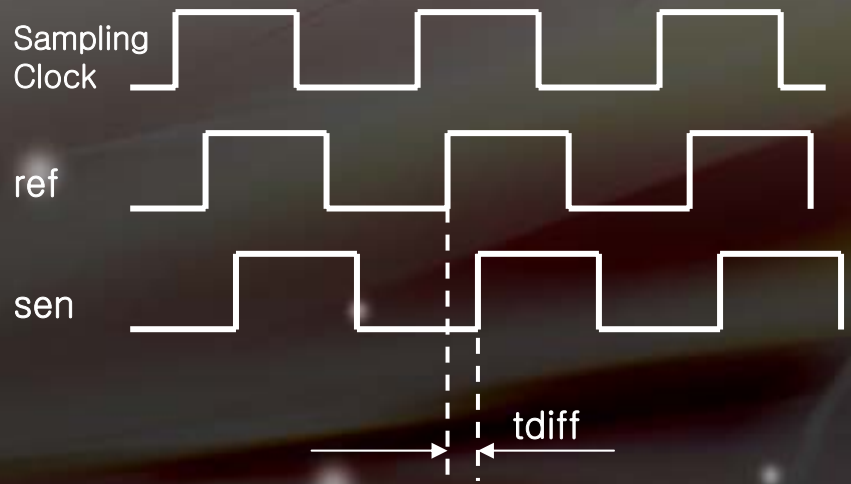
C_{touch}: The capacitance induced between finger and touch pad when touched.
ε : the constant value of permittivity (Air=1,Glass= 10, Acryl=5~10, Rubber=2~3)
D : The thickness of Set Cover
A : The size of Touch Pad

The Operating Principle of DCC



The Operating Principle of DCC





Sensor generates time delay

- **Sensing delay is compared with a reference delay**
- **Delay difference is measured by “ Time Converter ”**

ATA2508 Features

- Patented fully digital architecture
- Twelve channels (40QFN) or nine channels (32QFN,24SSOP) available
- Programmable registers to characterize applications
- I^2C for the host interface
- Different sensitivity assignment to each channel for design flexibility
- Configurable AIC™ (Automatic Impedance Calibration)
- Two kinds of interrupts (GINT for general purpose, TINT for touch detection)
- Eight bit resolution of touch strength data (256 step)
- APIS™: Mode1, Mode2, Mode3 (Adjacent Pattern Interference Suppression)
- Configurable twelve DIO pins

  as direct touch outputs, extended GPIOs, or external interrupt inputs
- Beep generation for tactile feeling
- Idle and Sleep modes for power saving
- De-bounced touch outputs

Strong Point

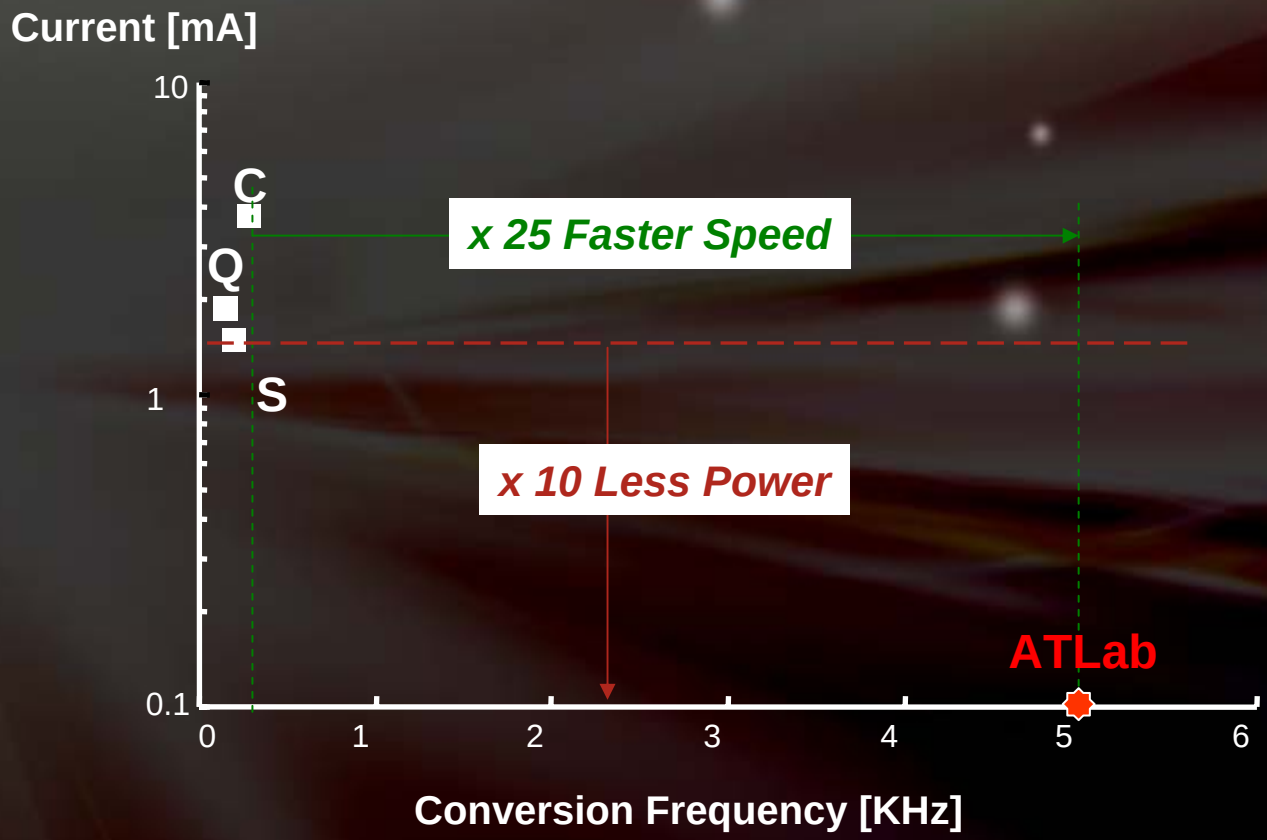
Consumption Current
Response Time

1. Consumption Current : 1/10 times comparing to competitors

- Because of not using analog technology, circuit architecture is very simple.

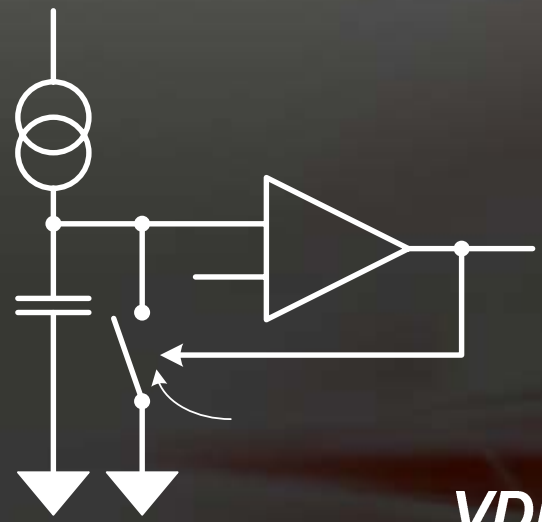
2. Response Time 25 times comparing to competitors

- Because it dose nor need not complex signal processing, can raise the data sampling rate.



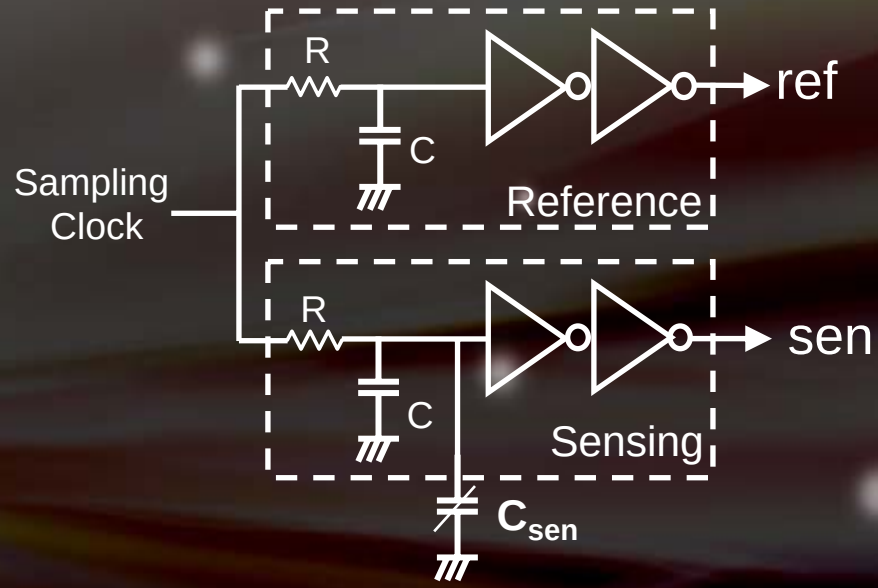
Differential vs. Single-End

Single-End Input



VDD

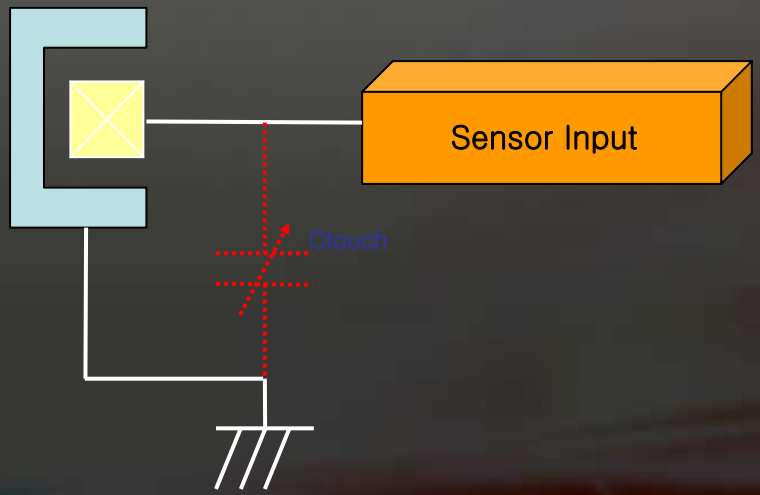
Differential Input

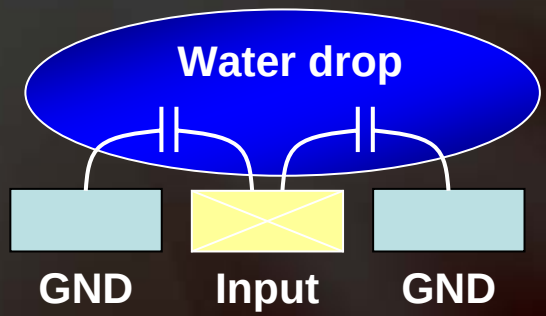


Strong Point

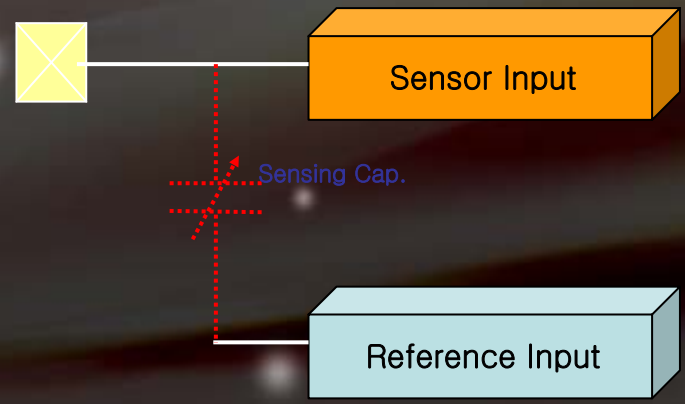
Water proof

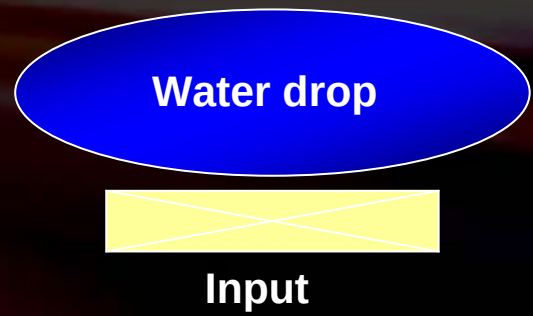
Single-End





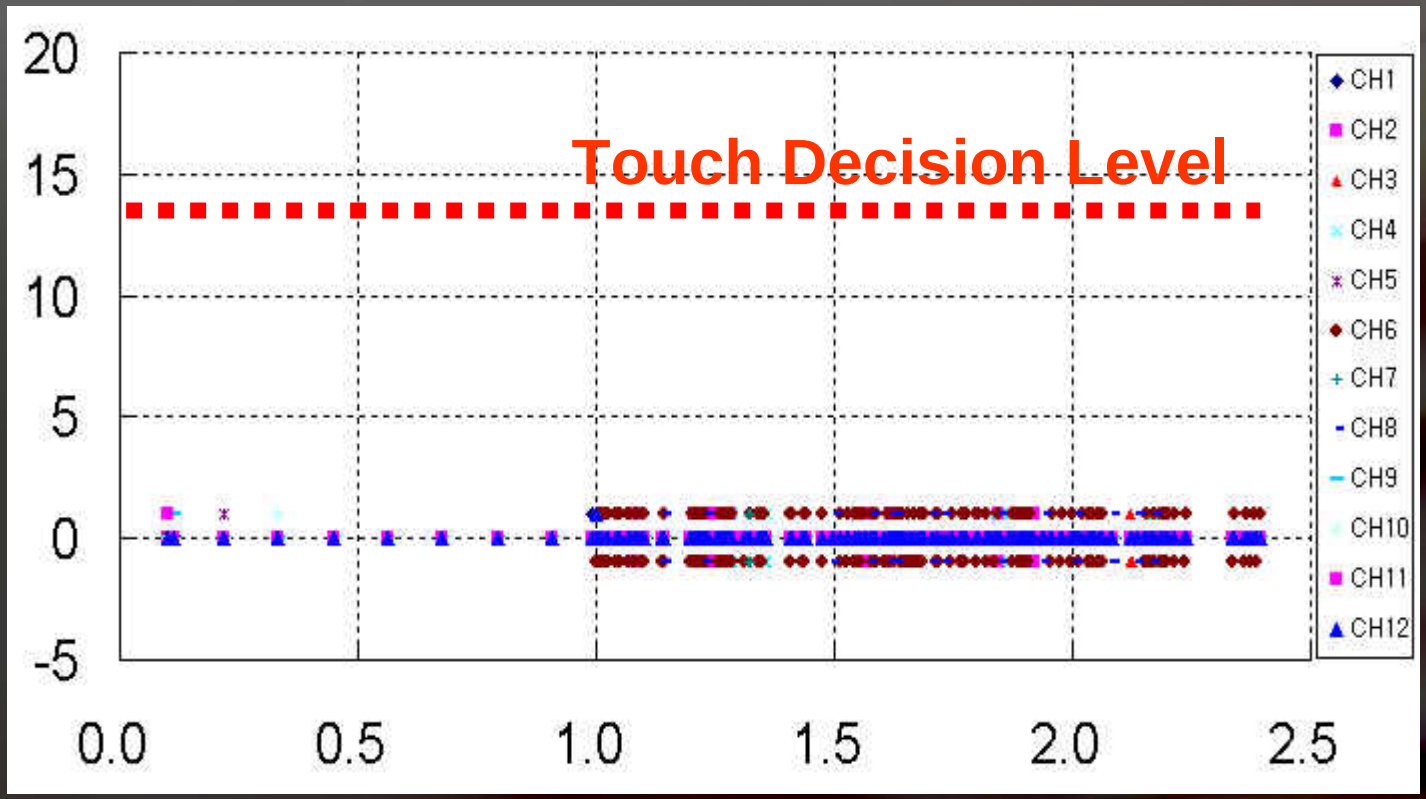
Differential





Strong Point

RF Susceptibility Test

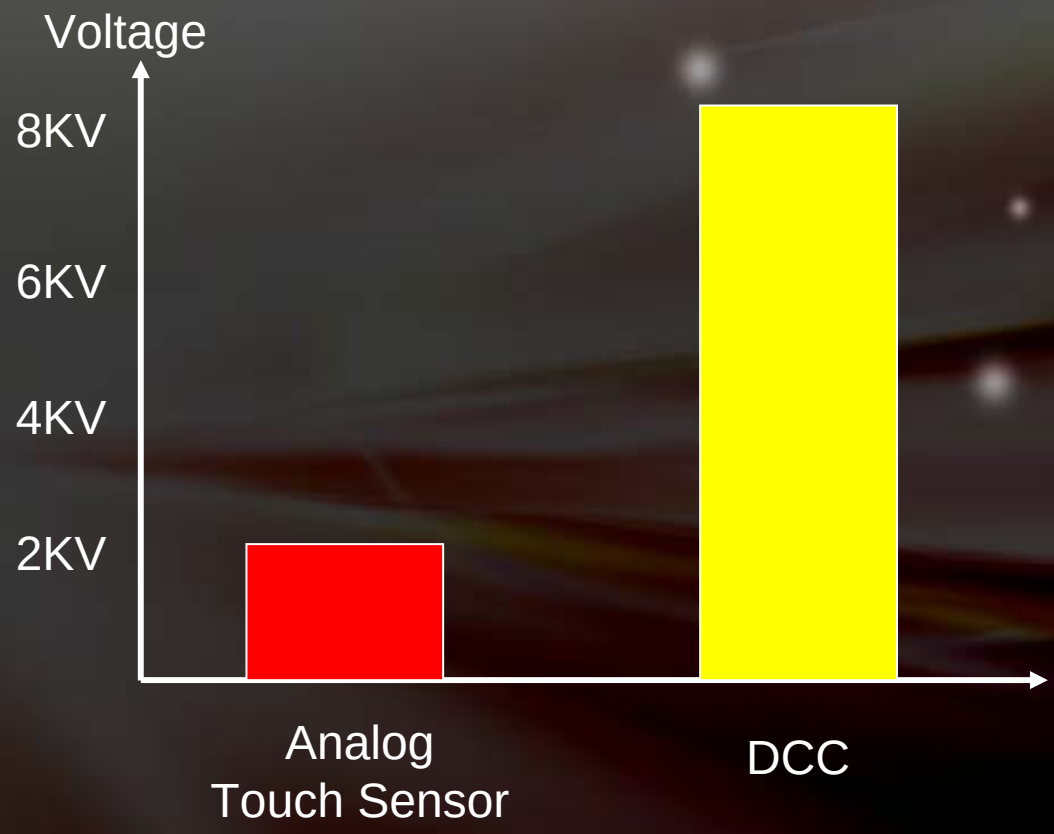


RF Signal: 3Vp-p swept from 100MHz to 2.4 GHz, Korea MIC Condition

Strong Point

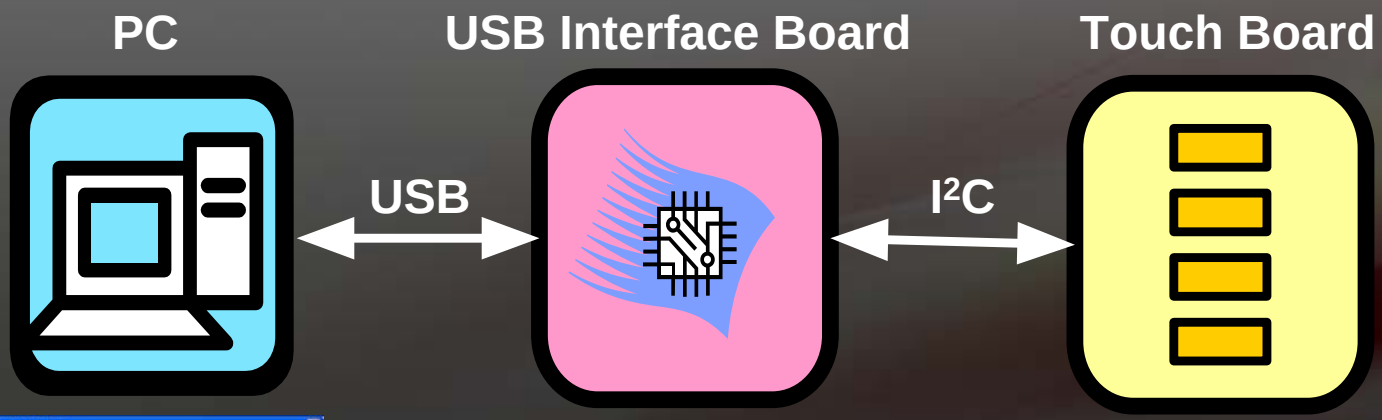
ESD Level

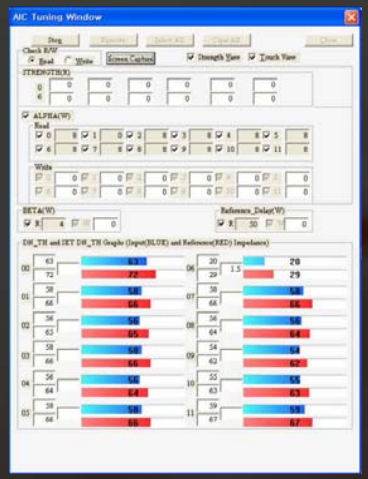
- HBM : 8KV (Input Sensor)
- Set : 15KV



Strong Point

Development Tool



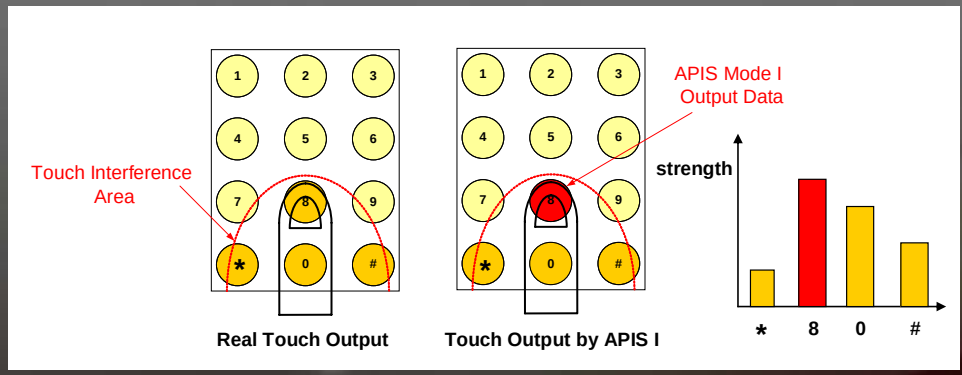


Tuning Kit provides you easy and quick design environment !

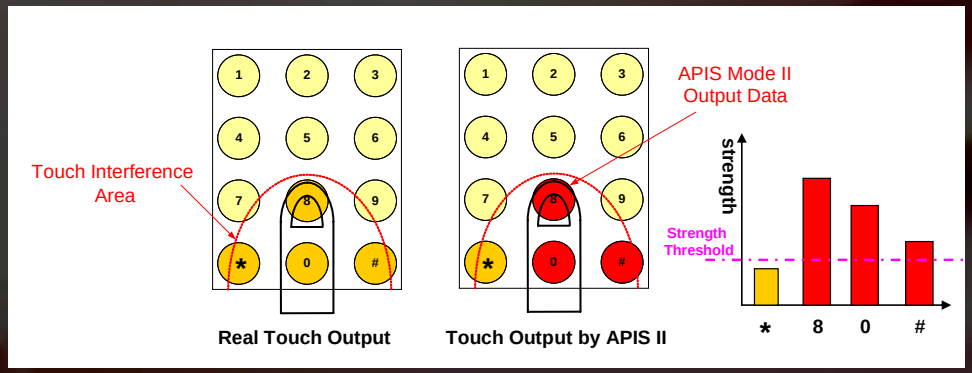
Feature

APIS mode

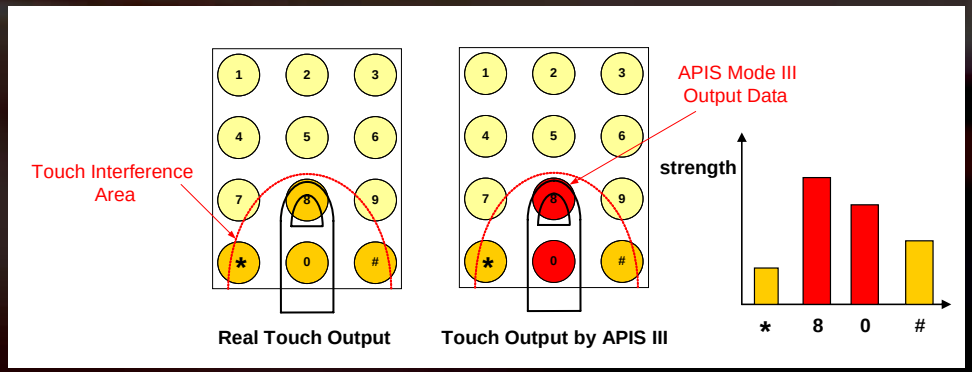
APIS mode 1



APIS mode 2

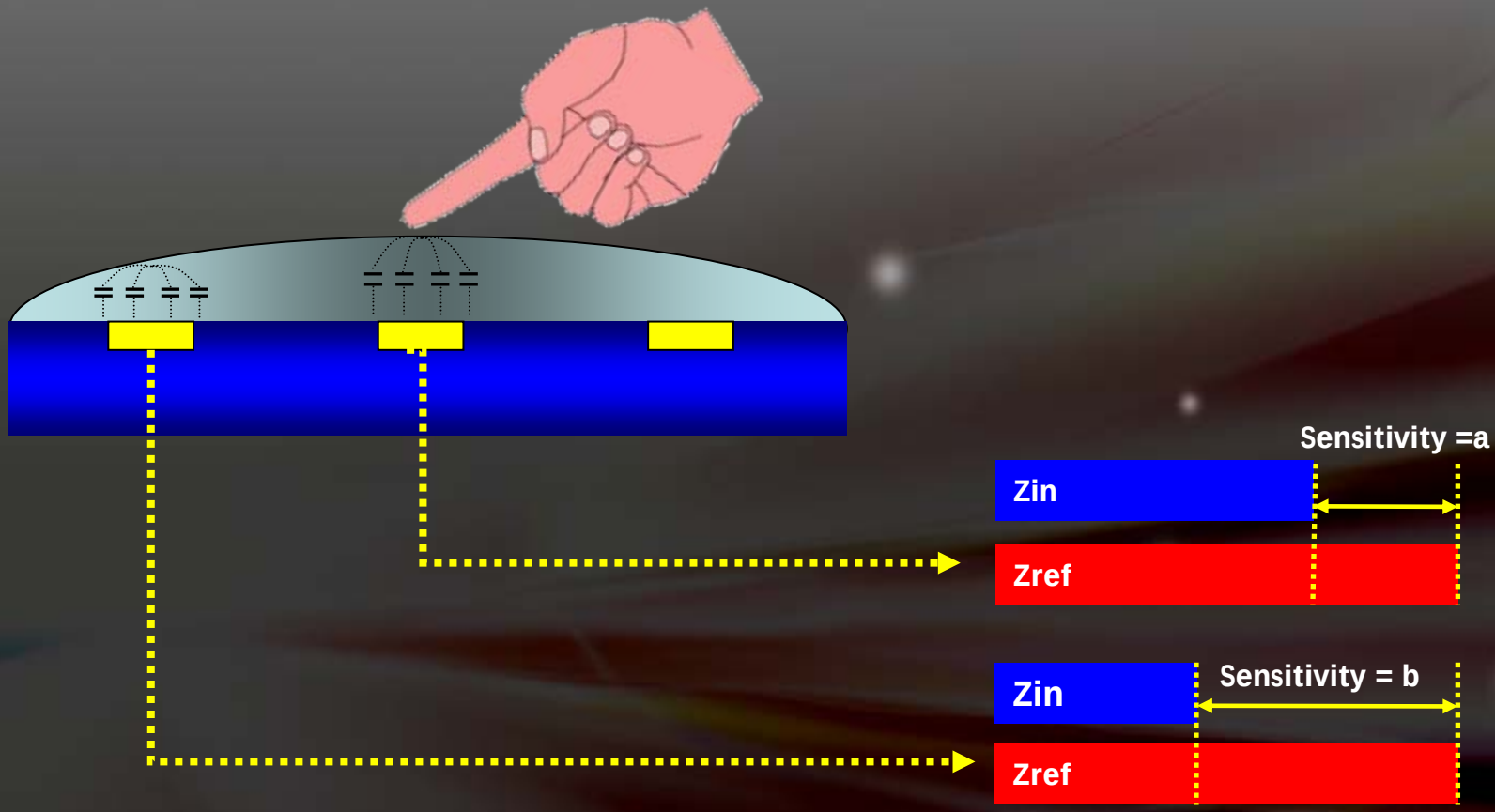


APIS mode 3



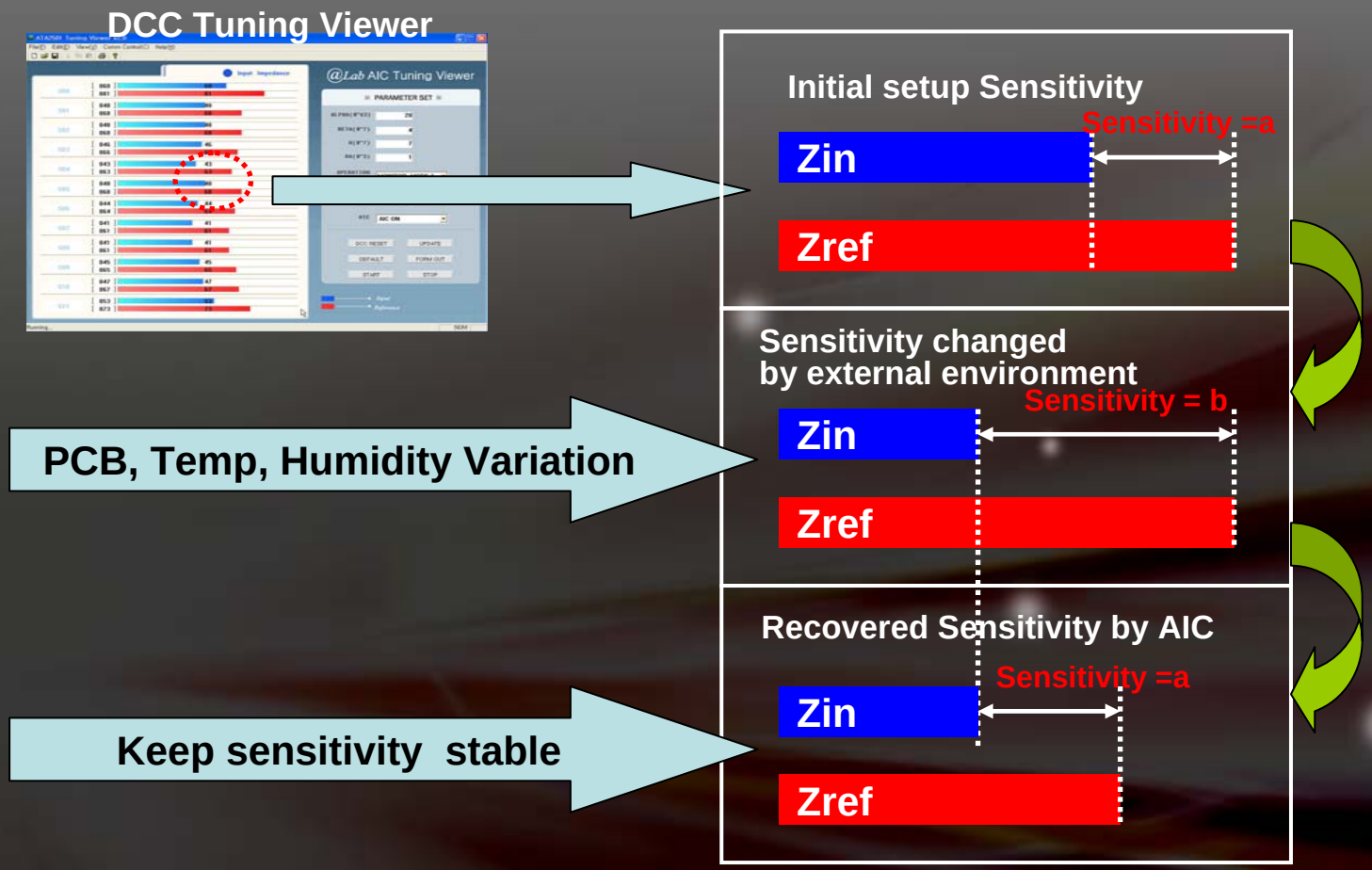
Feature

Individually Adjustable Sensitivity



Feature

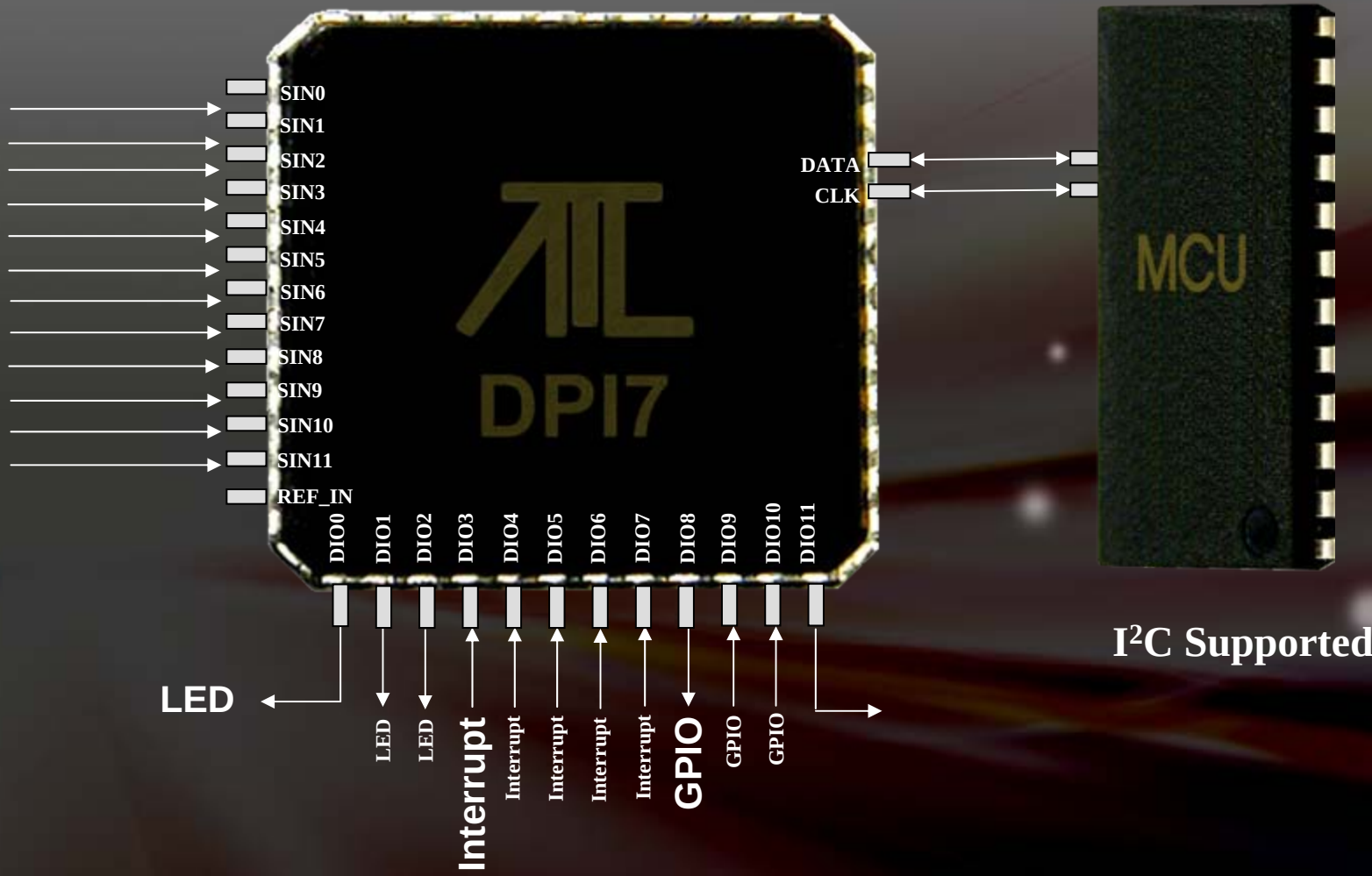
Configurable AIC



- Individual sensitivity setting by registers
- Pause/Resume AIC function by Host
- Configure AIC interval

Feature

General purpose DIO

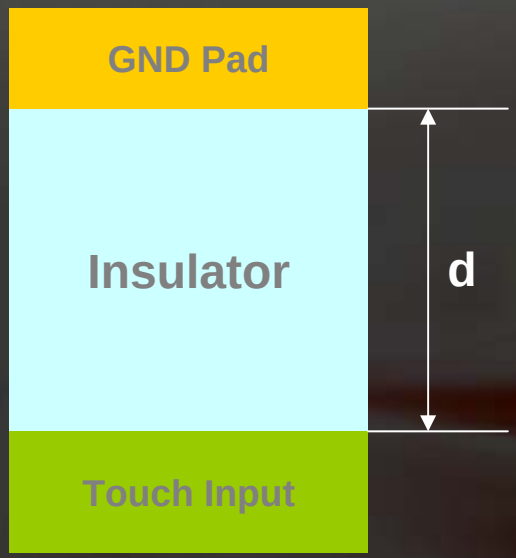


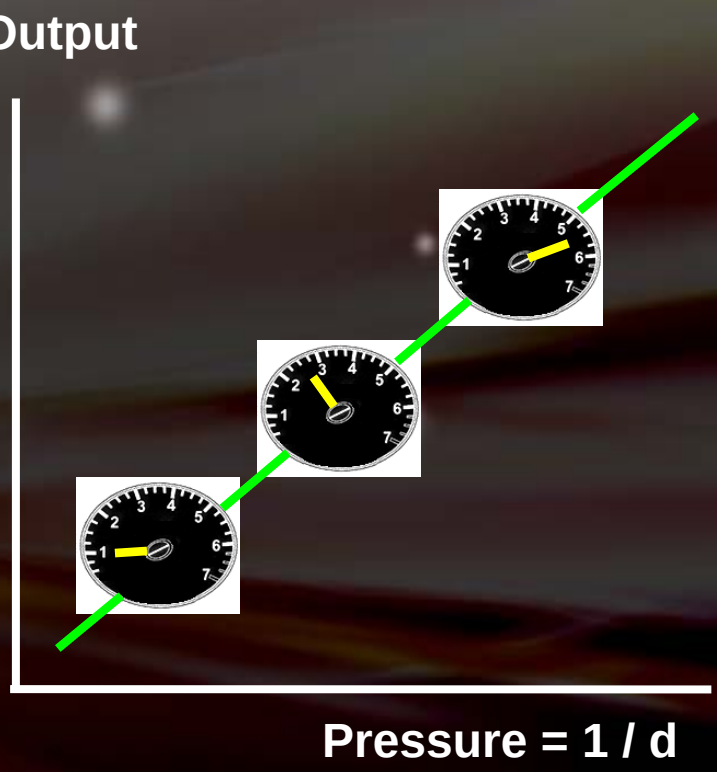
I²C Supported

Feature

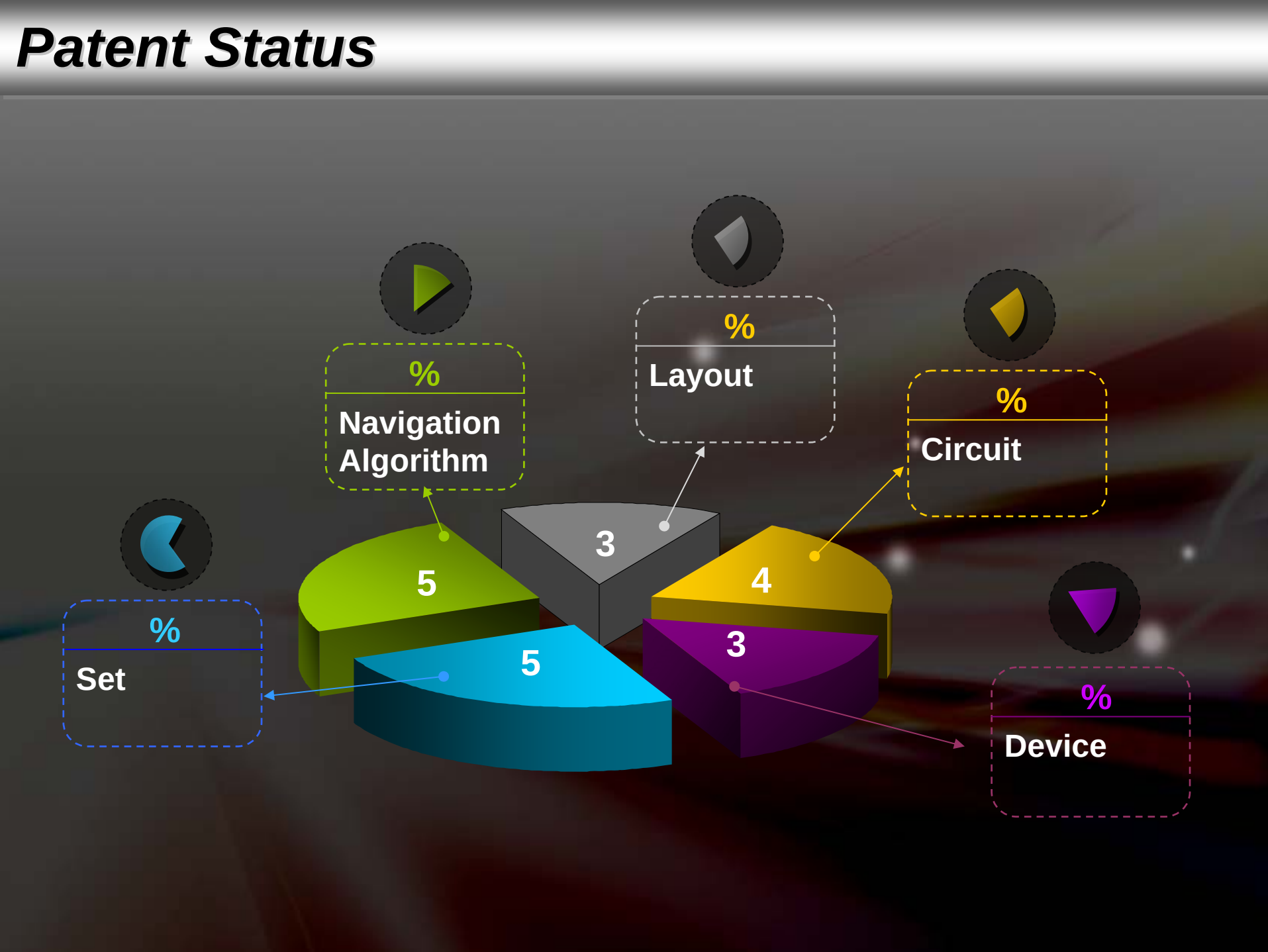
Strength Output

Accelerator using touch strength output function.

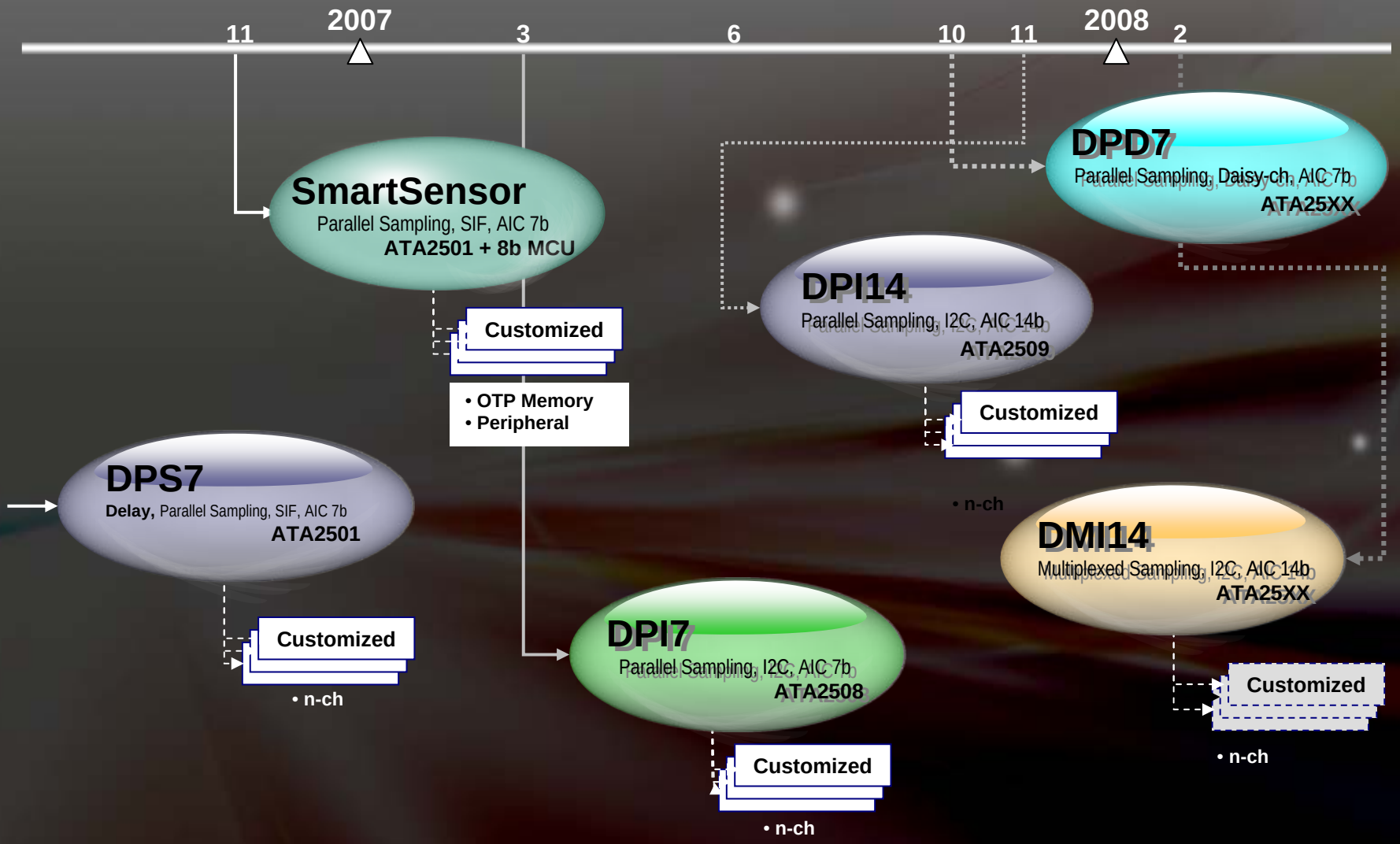




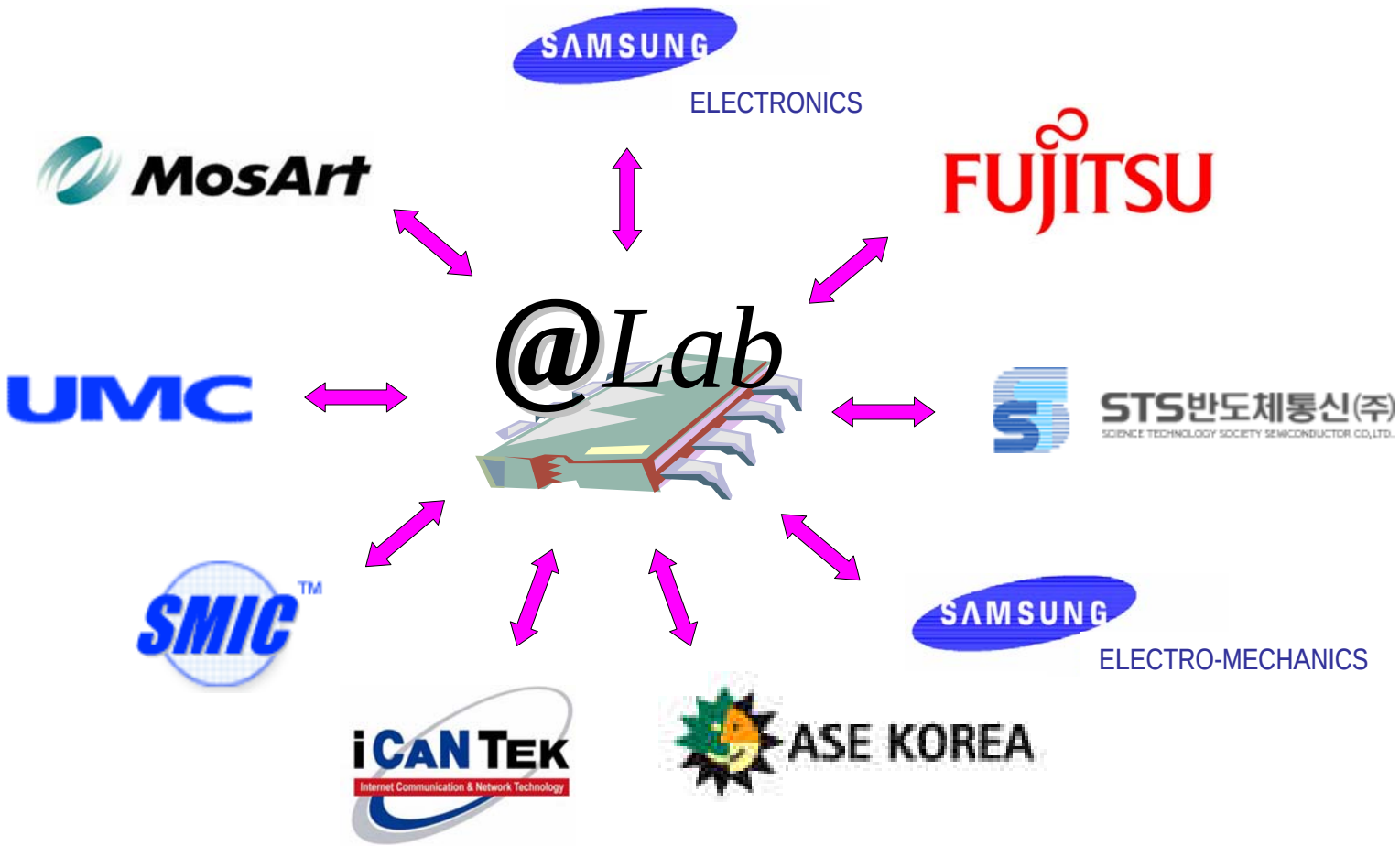
Patent Status



Road Map


11
2007
3
6
10
11
2008
2
SmartSensor
Parallel Sampling, SIF, AIC 7b
ATA2501 + 8b MCU
Customized
• OTP Memory
• Peripheral
DPD7
Parallel Sampling, Daisy-ch, AIC 7b
ATA25XX
DPI14
Parallel Sampling, I2C, AIC 14b
ATA2509
Customized
• n-ch
DPS7
Delay, Parallel Sampling, SIF, AIC 7b
ATA2501
Customized
• n-ch
DMI14
Multiplexed Sampling, I2C, AIC 14b
ATA25XX
DPI7
Parallel Sampling, I2C, AIC 7b
ATA2508
Customized
• n-ch
Customized
• n-ch

Shared Partners



Thanks !

Make It Easy and Simple !

DCC Call Center

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