SENSYLINK

申矽凌公司简介
Company Profile

关于申矽凌
About SENSYLINK

2015.02	150+	160M	300+	500M	12
Year of Establishment	Number of employees	Revenue	Numbers of products	Number of units shipped in 2022	Number of Locations

上海申矽凌微电子科技股份有限公司是一家专注于高性能传感器芯片以及混合信号芯片的半导体设计公司。自2015年成立以来，公司已成功研发并量产300多款具有完全自主知识产权、富有竞争力的产品。产品涵盖热管理芯片、温湿度传感器、环境光传感器、数模转换、数字接口、电流电压监测器以及运放比较器等多个品类，可广泛应用于工业、个人医疗、汽车、通讯以及消费电子等领域。

Sensylink Microelectronics Inc. is a high-performance semiconductor design company focusing on sensor chips and mixed signal chips. Since 2015, our company has successfully developed and mass produced more than 300 competitive products with fully independent IPRs. Our products are widely used in industrial, automotive, communications and consumer electronics markets.

SENSYLINK

客户
Customers

通信:

计算机/服务器:

安防:

工业:

医疗:

家电:

消费电子:

存储:

汽车/新能源:

SENSYLINK

供应商多元化
Diversification of Suppliers

晶圆 Wafer

封装&测试
Assembly & Test

tsmc

华虹集团 HUAHONG GROUP

华天科技 HT-Tech

JCET

Subsidiary company

SMIC

VIS 世界先進

unisem

STATSChipPAC

Location: China, Malaysia

China, Singapore, Korea

SENSYLINK

产品封装
Packages

SOT-563

CSP-4/1

CSP-6/7

DFN1.6X0.8-2

DFN2X2.5-10

QFN5X5-20

SC70-5

SC70-6

SOT-23

SOT-23-3

SOT-23-5

SOT-23-6

DFN3X3-6

DFN3X3-8

DFN3X3-10

QFN3X3-16

SOP-20

QFN4X4-24

MCLGA3X3-4

MSOP-8

MSOP-10

SOP-8

SOP-16

SSOP-16

TO-92

TO-92S-2

TSSOP-24

TSSOP-14

TSSOP-16

TSSOP-20

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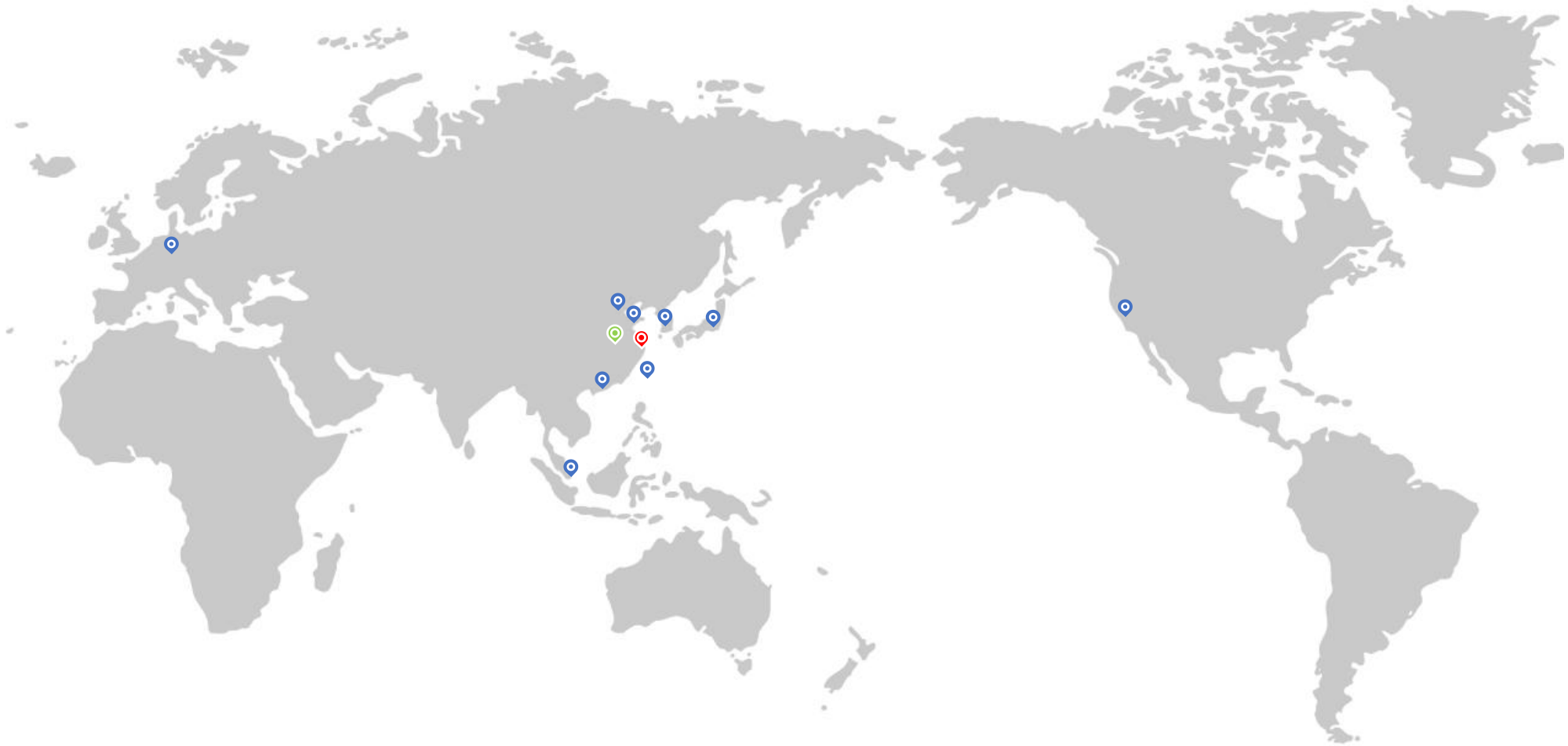
就近服务
Global Reach

SENSYLINK



City	Brench
Shanghai	
Hefei	
Jinan	
Beijing	
Berlin	
L.A.	
Shenzhen	
Singapore	
Soul	
Taipei	
Tokyo	

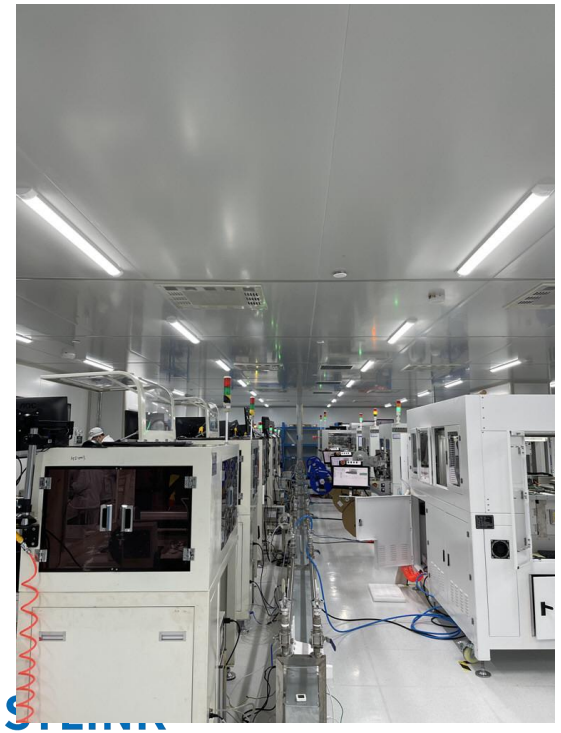
Headquarters
Design
Sales&FAE

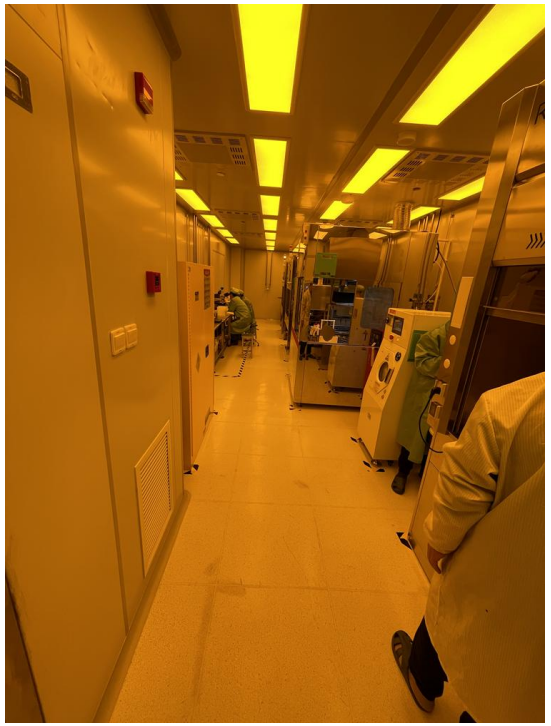
SENSYLINK

核心优势

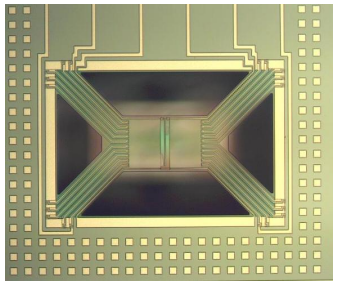
Core Value

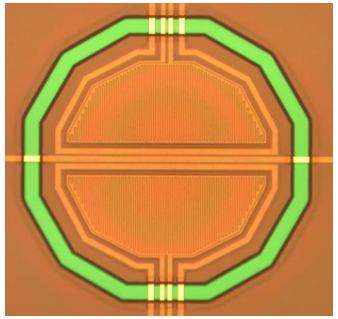
- >70% employees are engineers. Especially,
- 15+ experts & senior engineer guys focus on process, device, material, optical and package from world-class company.
- Developing and manufacturing transducers in our own processing Fab.
- Testing and calibrating each product in our own CP/FT Lab.
- 30+ granted patents are related to sensor manufacturing and calibration.

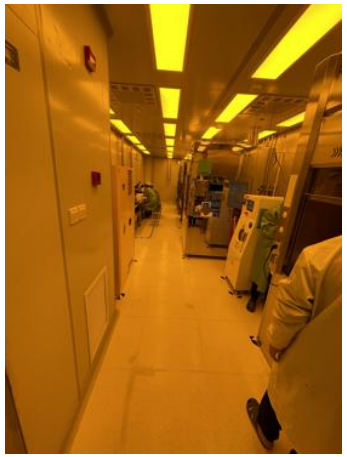


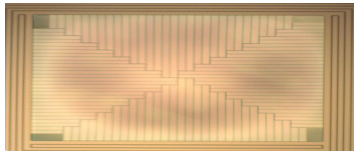


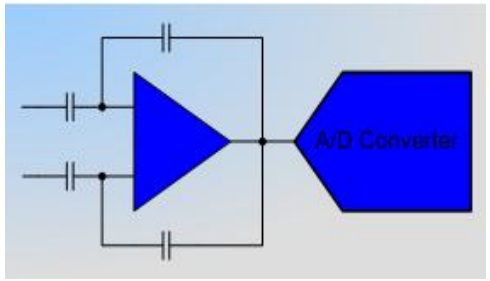
传感器/信号链芯片
Sensor/Signal-Chain IC

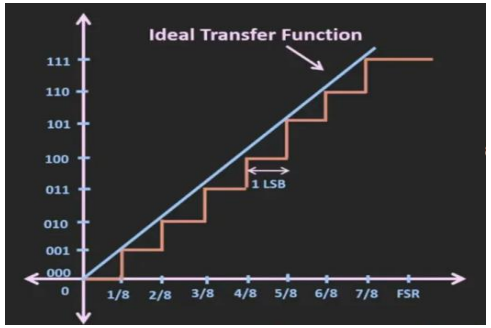


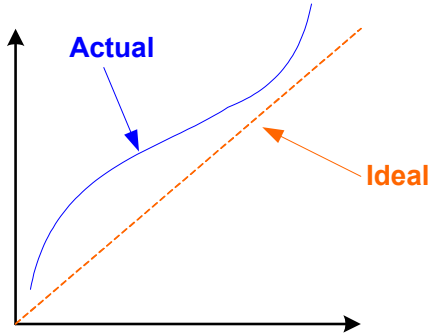












Transducer

Convert Physical Signal to Electrical Signal (Voltage)

ASIC

Optimized high performance **ADC** and other blocks like **Linear Regulator**, **Charge Pump**, **Current Source**, **PGA**, **MUX**, **Oscillator**, **Digital Filter**, **Voltage Reference**, **Digital Interface**

Calibration & Test

Used to calibrate for best linearity and offer correction option in CP/FT stage before shipment to get best measurement accuracy.

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百分百自有专利

100% IPRs

SENSYLINK

质量证书
Quality Certifications


此为证书 CN18/20438 译本

SGS

下述组织

上海申矽凌微电子科技股份有限公司

统一社会信用代码：91310112332780357X

注册地址：上海市闵行区虹梅南路 2588 号 1 幢 A320 室

经营地址：中国上海闵行区紫月路 1000 号 320 室

的管理体系已经过审核，并被证明符合下述要求

ISO 9001:2015

所涉及的活动范围覆盖

传感器、接口、混合信号集成电路的设计、测试和生产外包管理

该证书的有效期自 2022 年 12 月 15 日 至 2024 年 04 月 24 日 并须经过符合要求的监督审核保持有效

版本号 0，初始注册日期 2018 年 04 月 25 日

签署

Jonathan Hall

Global Head -

Certification Services

SGS United Kingdom Ltd

Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK

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本证书信息可在国家认证认可监督管理委员会官方网站 www.cnca.gov.cn 上查询

SGS

UKAS

IAF

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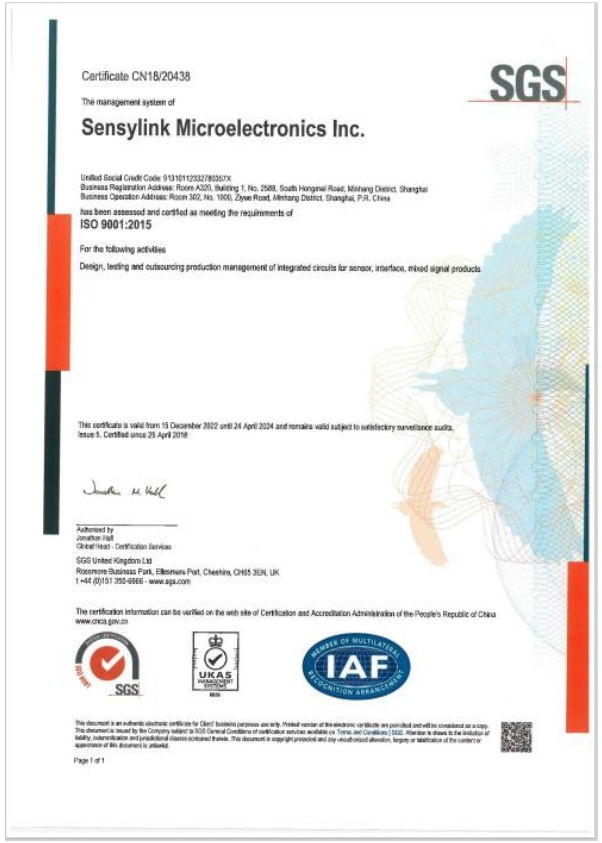
Certificate CN18/20438

SGS

The management system of

Sensylink Microelectronics Inc.

Unified Social Credit Code 91310112332780357X

Business Registration Address: Room A320, Building 1, No. 2588, South Hongmei Road, Minhang District, Shanghai

Business Operation Address: Room 302, No. 1800, Zyse Road, Minhang District, Shanghai, P.R. China

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

Design, testing and outsourcing production management of integrated circuits for sensor, interface, mixed signal products

This certificate is valid from 15 December 2022 until 24 April 2024 and remains valid subject to satisfactory surveillance audits.

Issue 5. Certified since 25 April 2018

Authorised by

Jonathan Hall

Global Head - Certification Services

SGS United Kingdom Ltd

Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK

t +44 (0)151 350-6666 - www.sgs.com

The certification information can be verified on the web site of Certification and Accreditation Administration of the People's Republic of China

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Page 1 of 1

- **质量体系 Quality System**

通过ISO9001:2015, 建立完善的质量管理体系,为提供高质量、高标准的产品和服务而不断努力，持续改进。

Through ISO9001:2015, we have established a good quality management system and made continuous efforts to provide high-quality and high-standard products and services.

- **质量方针 Quality Policy**

为客户提供高性能的产品和完善及时的客户服务，以实现客户满意的目标。

Provide customers with high performance products and perfect timely customer service to achieve the goal of customer satisfaction.

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产品分类
Product Portfolio

Signal Chain

* IO expander
* Level shift
* Analog Switch
* Operational Amplifier
* ADC
* DAC
* SLIC
* V-ref
* Security

Sensor

* TemperatureSensor
* Humidity Sensor
* Power/Current Monitor
* Optical Sensor
* Hall Sensor
* Thermal Couple

产品分类
Product Portfolio

传感器 Sensor

产品种类

- 温度传感器
- 温湿度传感器
- 环境光传感器
- 霍尔传感器
- 电流/功率传感器
- 系统温度/电压/风扇转速监测器

重点应用

- 个人电脑
- 可穿戴设备
- 无线基站
- 家电/物联网
- 光伏/新能源
- 汽车电子
- 智慧农业

接口/SLIC Digital Interface

产品种类

- GPIO扩展
- 开关/多路复用器/主选择器
- I2C接口控制开关
- 缓冲/信号中继器
- 总线电压电平转换器
- DDR4模组 SPD HUB
- SLIC

重点应用

- 个人电脑
- 路由器
- CPE/PON/WiFi7
- 交换机
- DDR模组
- 汽车
- 无人机

信号链 Mixed-Signal

产品种类

- 电压基准
- 热电偶信号调理
- 运算放大器
- 比较器
- 通用ADC

重点应用

- 电子烟
- 家电
- 精密仪器
- 血糖仪
- 服务器
- 工业

安全认证 Security

产品种类

- 安全认证芯片
- 单线存储芯片

重点应用

- 打印机
- 医疗
- 工业机器人
- 无人机
- 电池ID认证
- NFC Tag
- IP保护
- 汽车电子

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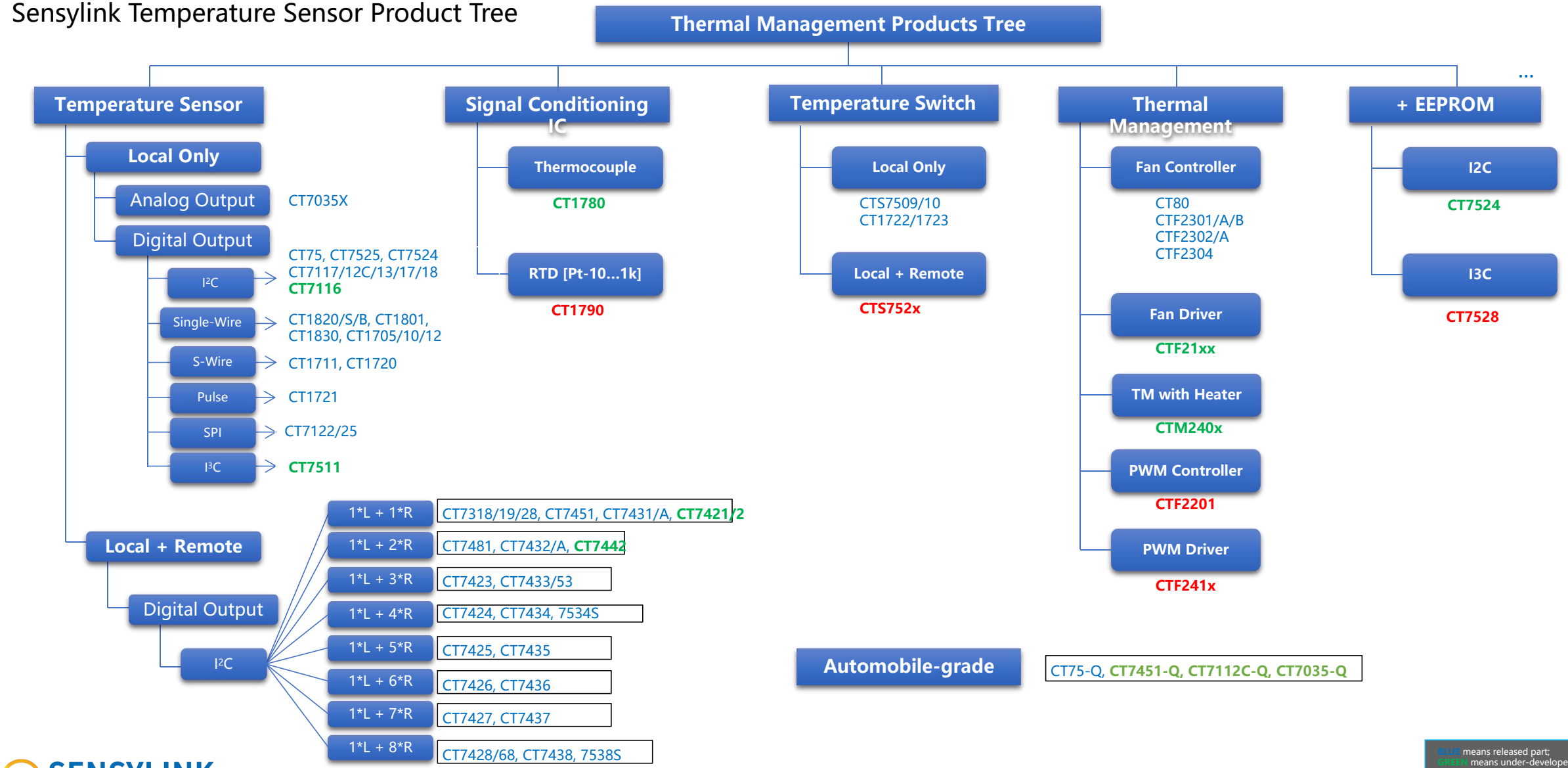
申矽凌温度传感器产品树
Sensylink Temperature Sensor Product Tree



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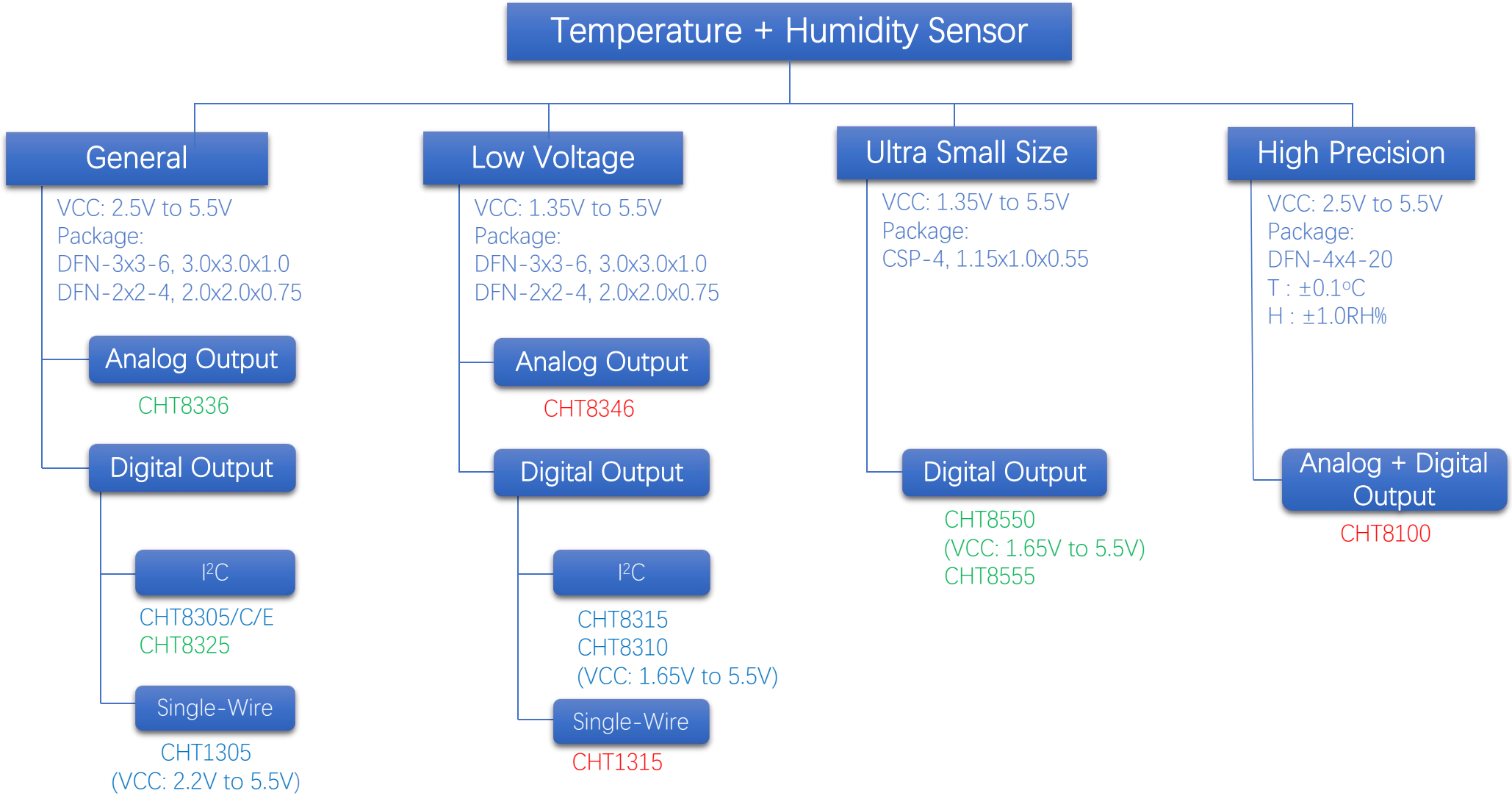
BLUE means released part;
GREEN means under-developed part;
RED means feasibility study part.

申矽凌湿度传感器产品树
Sensylink Humidity Sensor Product Tree



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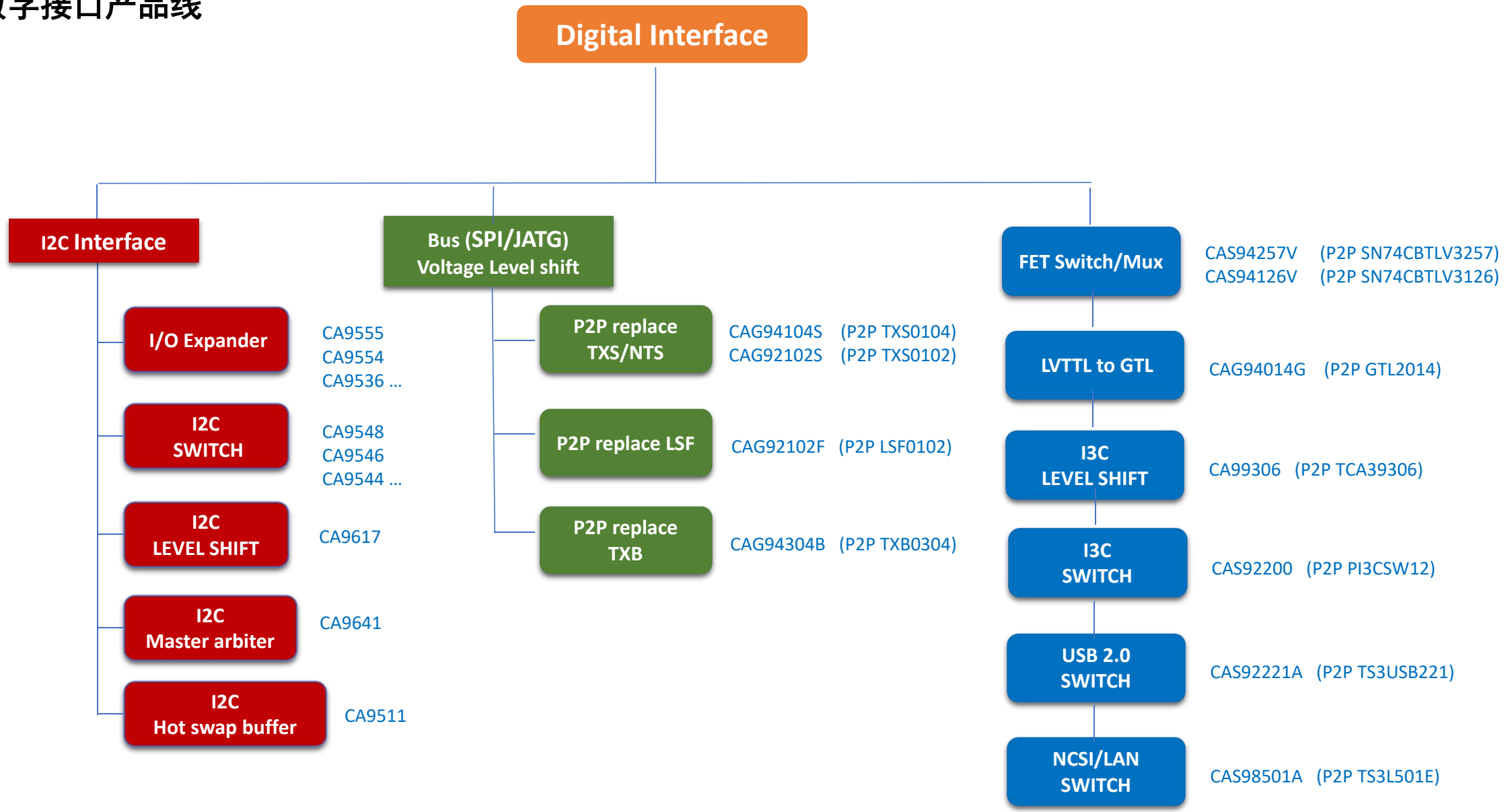
数字接口产品线



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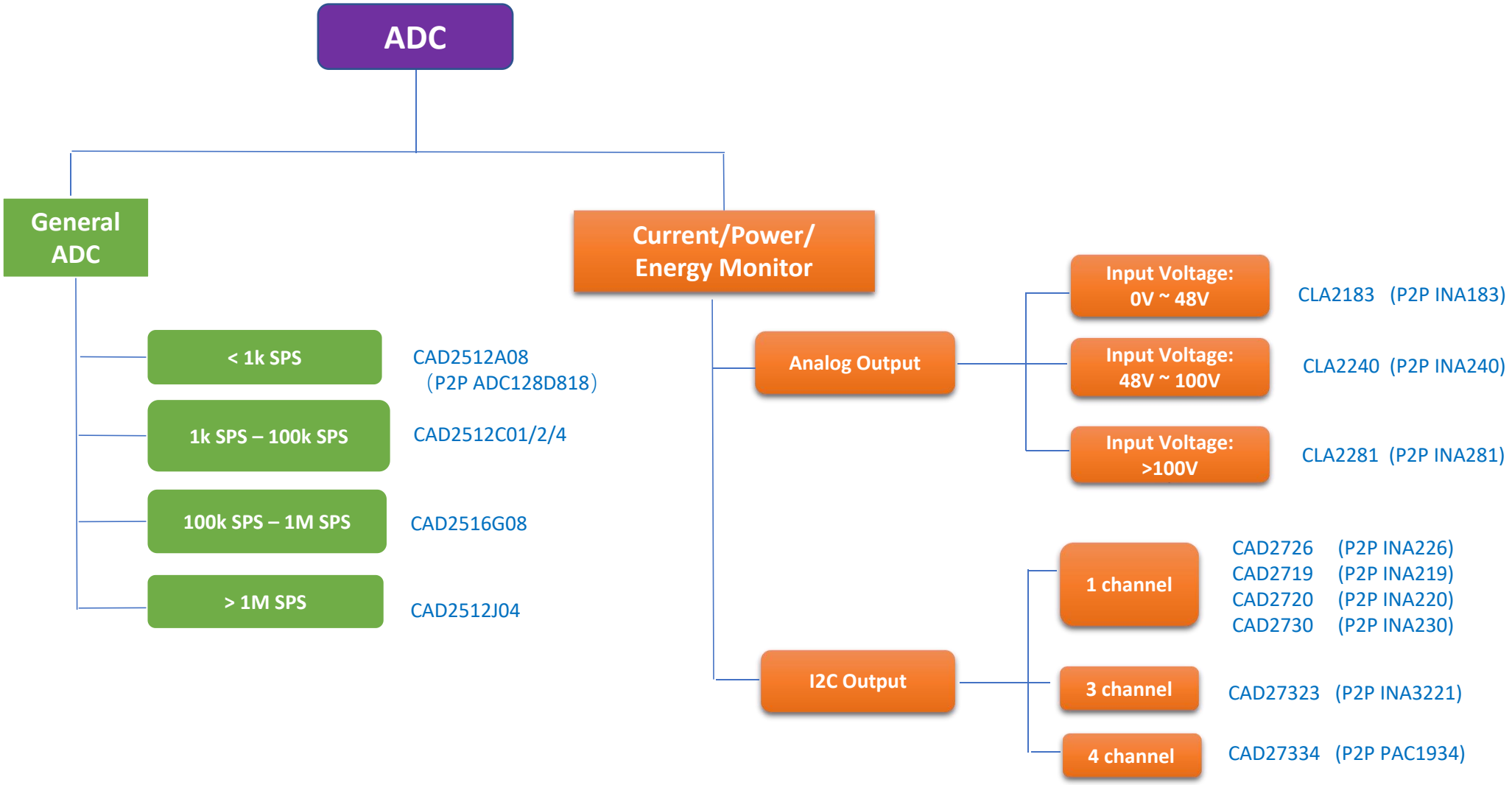
ADC产品线



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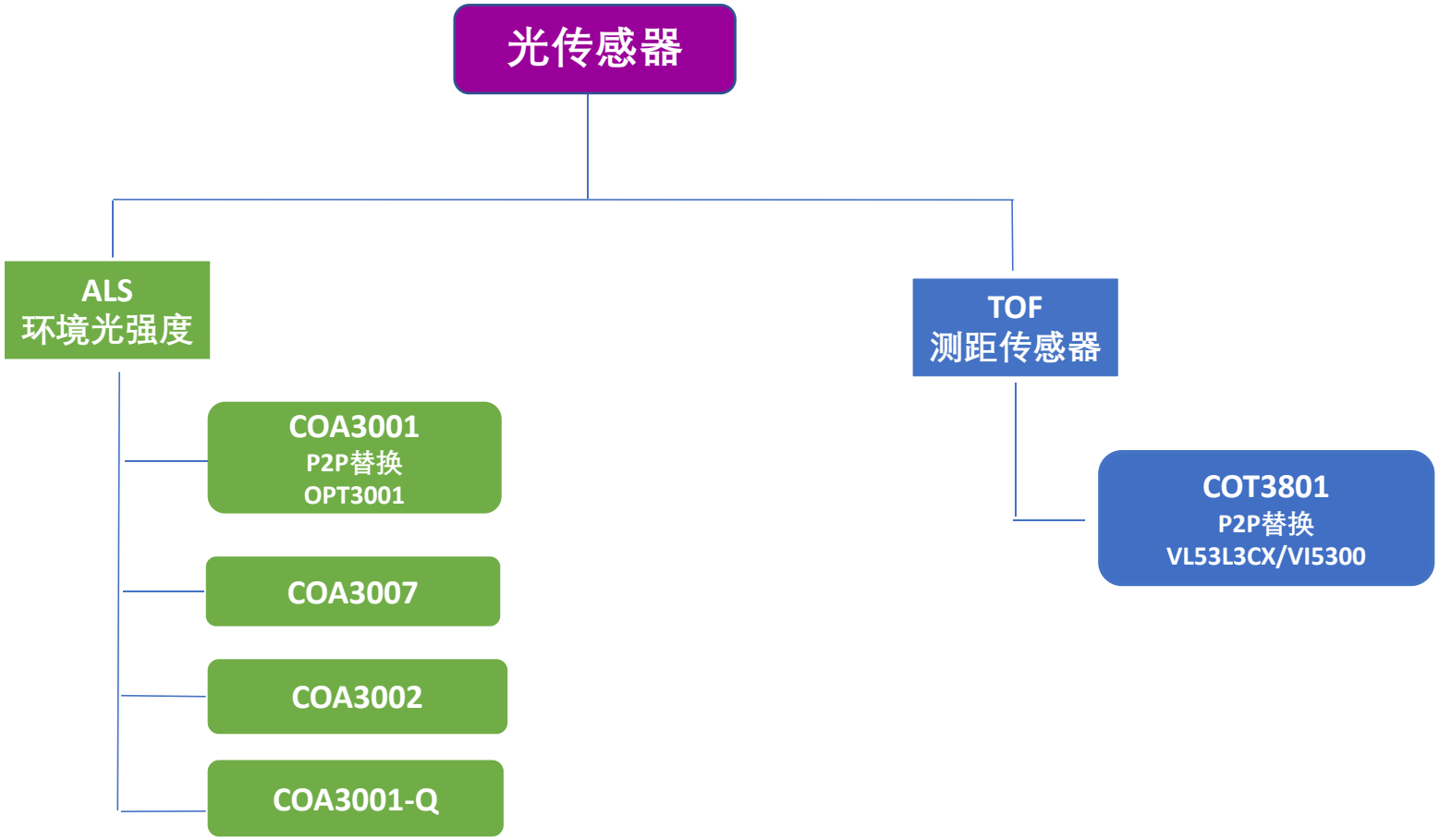
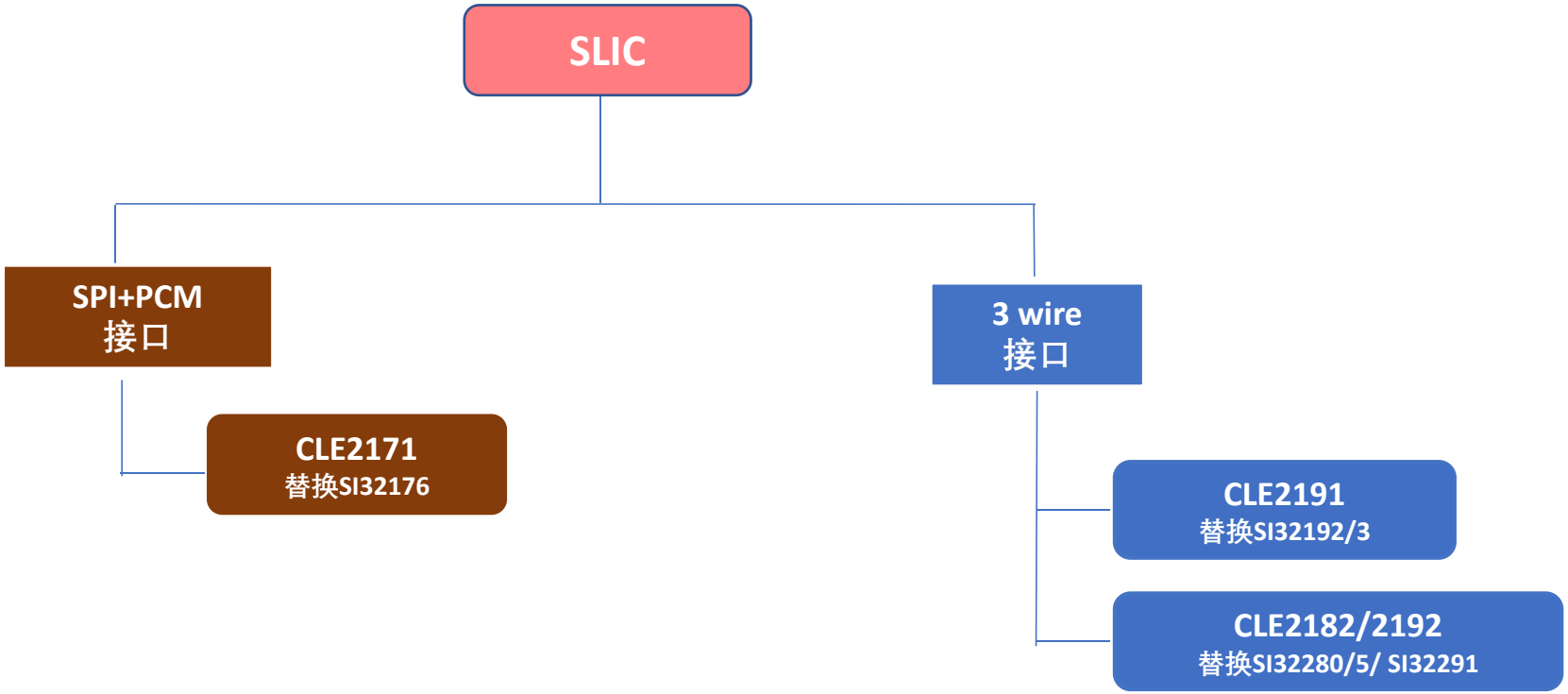
光学传感器产品线


光传感器
ALS
环境光强度
COA3001
P2P替换
OPT3001
COA3007
COA3002
COA3001-Q
TOF
测距传感器
COT3801
P2P替换
VL53L3CX/VI5300

SLIC产品线


SLIC
SPI+PCM
接口
CLE2171
替换SI32176
3 wire
接口
CLE2191
替换SI32192/3
CLE2182/2192
替换SI32280/5/ SI32291

加密鉴权产品线

CSA2815/CSA2830(SHA-256,ECDSA256)

PLC, Servo, HMI applications

1. FPGA IP protection

2. IP(Software) protection

3. License management

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05

PART 05

应用案例

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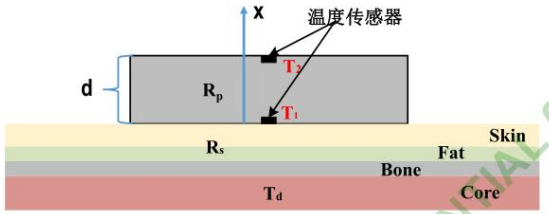
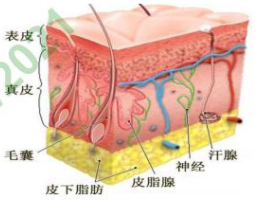
Smart Wearable Applications

体表温度 ≠ 体温





图中
T_d：体温（核心温度），T_1：体表温度
R_p：测温单元热阻，　R_S：**皮肤组织等效热阻**

对应均匀介质，傅立叶传热关系为：

$$\frac{\partial^2 T}{\partial x^2}+\frac{\partial^2 T}{\partial y^2}+\frac{\partial^2 T}{\partial z^2}=\frac{1}{\alpha}\frac{\partial T}{\partial t}$$

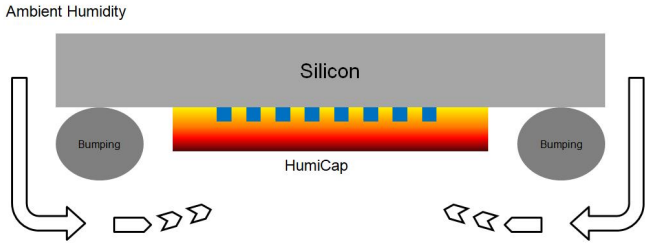
基于傅立叶传热方程，在稳态情况下可得到厚度**x**方向的温度表达式：

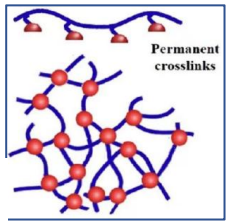
$$T(x)=T_1+\frac{R_p}{R_s}(T_1-T_d)\frac{x}{d}$$

通过测量T_1和T_2，设计R_1，可以计算核心温度T_d

$$T_d=T_1+\frac{R_s}{R_p}(T_1-T_2)$$

难点：R_S不是常数，是和个体相关的，需要动态的测量出来，这是我们掌握的核心技术之一。





- 超高精度 Ultra High Accuracy
- 超小尺寸 Ultra Small Size
- 超低功耗 Ultra Low Power Consumption
- 超低长期漂移 Ultra Low Long-Term Drift
- 抗外界沾污 Dirt-Resistant

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Smart Wearable Applications

Device	Type	Application	Spec	Customer	Product
CT7117 CT1711	温度传感器	环境测温、体温	±0.1℃	XiaoMI/HW	手表、tws 耳机、VR
CHT8555	湿度传感器	环境测湿度、体表湿度	2%	白牌	手表
CSA2815	加密鉴权	上报TWS耳机数据给到耳机盒	单线通信，上报数据		tws耳机
COP3101/3/4	PIN PD	心率，血氧	红光，兼容SFH2701/3/4		tws，手表，手环

手机光感
Optical Sensor for smart phone

Camera enhancement

Spectrum + Flicker
COS2281

Color + Flicker
COC3410

ALS + Flicker
COA3510/COA3521

"Light ID" AWB + Flicker

AWB + Flicker

AE + Flicker

1D ToF
COD3801

8*8 ToF
COD3808

40*30
3D dToF module

Auto Focus

3D modeling
& AR/VR

Screen management

OLED

BOLED ALS

BOLED CCT

BOLED PROX

LCD

Bezel 3in1
COM3320
COM3330

Water drop 3in1
COM3322

2023 | **2024** | 2025

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手机
Smart phone

Device	Type	Application	Spec	Customer	Product
COA3510	环境光检测	环境光检测			手机
CSA2815	加密鉴权	原厂电池检测			手机

网通行业客户

UBIQUITI NETWORKS
FOXCONN 鴻海科技集團
WNC
SERCOM
LITEON
ZTE中兴
H3C
Ruijie锐捷 Networks
FiberHome
T&W
菲菱科思

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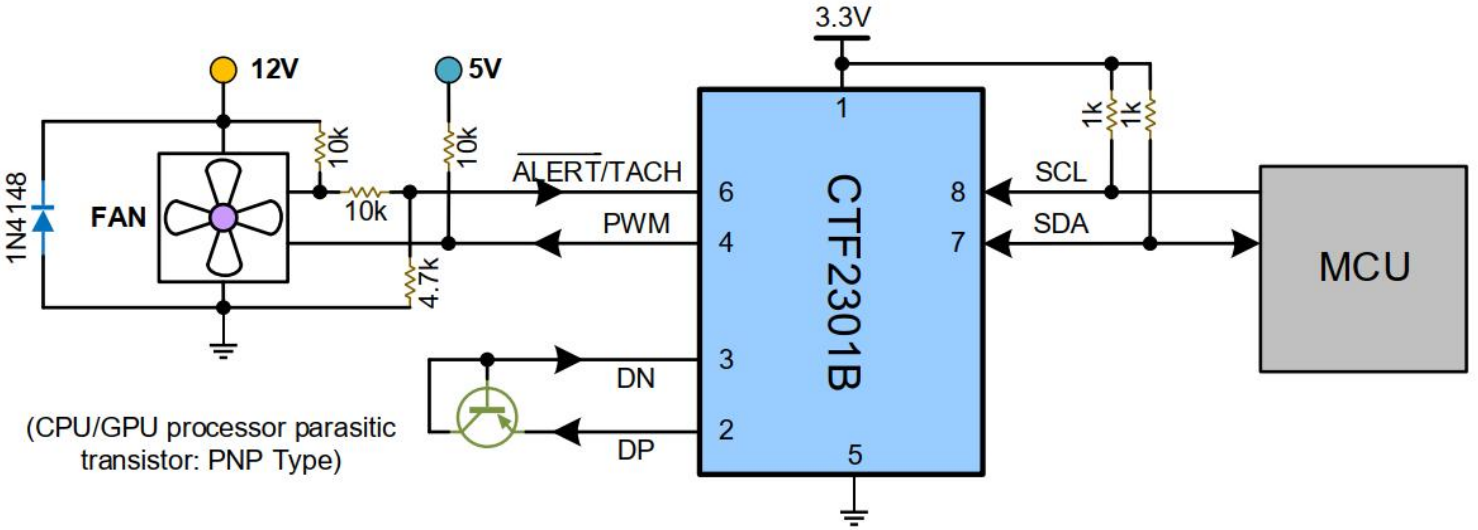
Successful story sharing—WIFI 7 AP/UBIQUITI

At present, Sensylink's temperature sensor products and fan control solutions have been successfully imported into UBIQUITI's WIFI 7 AP product. The temperature sensor is mainly used to detect temperature, and the temperature information is handed over to the CPU inside the AP. The CPU then adjusts the cooling strategy based on the temperature.The main manufacturers of WiFi 7 chips include Qualcomm, Broadcom, and MTK, all of them have high CPU power consumption, resulting in high heat generation. Customers are no longer suitable for using traditional passive heat dissipation, such as metal heat sinks, in their design. Firstly, the cooling efficiency is poor, and secondly, the cost is high. Therefore, UBIQUITI's WIFI 7 new product has added a fan controller from Sensylink's CTF2301B, paired with a single fan for cooling management.

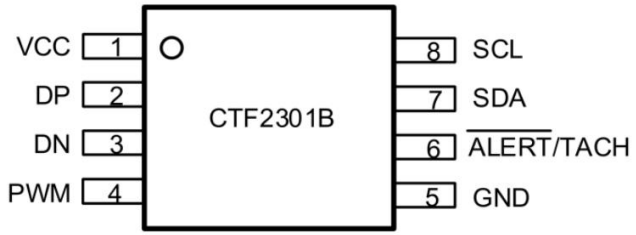
Successful story sharing—WIFI 7 AP/UBIQUITI

1. Fan controller CTF2301B

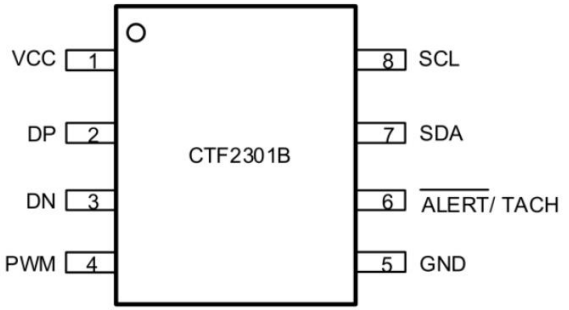
- VCC: 3.0V to 3.6V
- 1-CH fan PWM driver
- 1 Local +1 Remote temperature sensor
- Temperature accuracy: ±1%
- PWM Frequency: 22.7Hz to 180KHz
- Duty Cycle: 0% to 100%, 8 Bits
- I2C / SMBus Interface
- Package: MSOP-8, SOP-8
- Temperature Range: -40°C to +125°C



Typical Application of CTF2301B



MSOP-8



SOP-8

SENSYLINK

SLIC in Data Communication System

PON

CPE

智能门锁

IO扩展---高端门锁外设多，目前主控Cypress和Ambiq满足不了---CA9539 16I/O CA9536 4I/O
加密IC---远程开锁---CSA2815
温湿度---室内、室外温湿度监控---CHT8320
温度开关---火灾高温自动解锁---CT7318

加湿机、空气净化器

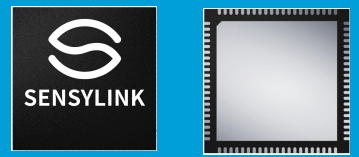
Device	Type	Application	Spec	Customer	Product
CHT8525	湿度传感器	环境测湿度	2%	xiaomi	空气净化器

智能音箱

Device	Type	Application	Spec	Customer	Product
CHT8520	湿度传感器	环境测湿度	2%	阿里巴巴	智能音箱

超声方案

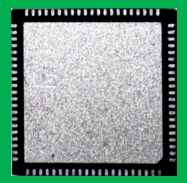
Transmitter



HV Pulser / Linear Driver for Piezoelectric

- Latch up free technology
- 8 to 32 independent channel with 3/5 levels
- T/R switch inside
- Beam former embedded
- Direct Drive Architecture
- Programmable Current Capability for different Modes
- Damp and Clamp function
- Bleed Resistor on OUT
- Automatic thermal protection

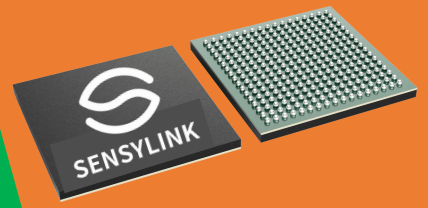
MUX



HV Mux with T/R Switch

- Latch up Free Technology
- 8 to 32 independent channel
- Bleed resistor integrated
- Max. 220Vpk-pk or ±150V withstand
- ±2.5A output
- Low RON (8.5Ω typ.) with 1.85% Flatness
- Up to 80MHz BW
- Excellent Off Isolation (-76dB at 5MHz)
- -62dB Crosstalk at 5MHz

Receiver



Analog Front End with Low Noise and Low Power

- 16 to 32 channel AFE
- Power consumption, 50mW /CH
- Noise, 1.3nV/rtHz
- 12-bit, 80MHz ADC
- LVDS or JESD204B/C
- BGA-289 ball package

Application in Industrial System

PLC

HMI

DCS

SENSYLINK

消防行业客户

终端产品	申矽凌物料	说明	推荐型号
光电感烟火灾探测报警器（减光式或散射光式）	PD	红外线接收感应	
光电感烟火灾探测报警器（减光式或散射光式）	电平转换	MCU与无线模块之间通信电平转换,1.2v转3.3v	CAG94104S
图像型火灾探测器	温度传感器	热成像温补（±0.1℃精度）	CT7117
图像型火灾探测器	热管理芯片	温控电加热，测温+自动输出pwm逻辑	CTF2301
图像型火灾探测器	PD	异常红外线预感应，热成像不用常开，降低系统功耗	
图像型火灾探测器	湿度传感器	摄像头凝露检测，加热去凝露，避免遮挡摄像头	CHT8320
无线手动报警开关	Level Shift	MCU与无线模块之间通信电平转换,1.2v转3.3v	CAG94104S
无线手动报警开关接收端	加密鉴权芯片	报警开关信号鉴权，确认信号非伪造	
可燃气体探测器	湿度传感器	气体密度检测补偿	CHT8315
点型感温火灾探测器	运放	放大模拟NTC信号	CAA084
点型感温火灾探测器	温度开关	过温报警,输出中断	CTS7509
消防广播电话一体机	SLIC	数字音频IIS信号转为模拟双绞线电话信号，100V Between Tip&Ring	CLE2171
温度型独立式数据采集终端	温度传感器	温度采集	CT1711
消防应急照明灯	湿度检测	灯具密封度检测	CHT8320
温湿度探测器	湿度传感器	温湿度检测	CHT8315
电源监控系统	电流/电压检测	电流电压监测，支持高达80V	CAD2726
组合式电气火灾监控探测器	Multiplexer	4 to 1 路信号选通器	CAS92253V
组合式电气火灾监控探测器	IO 扩展	16路io扩展，SMBUS/I2C接口	CAS92253V
组合式电气火灾监控探测器	I2C开关	I2C开关，Sensor Hub	CA9548

SENSYLINK

粮仓应用

MP

- 温度传感器　　CT1820B　　单总线，无限次擦写，温度
- 温湿度传感器　　CHT1305C　　单总线，无限次擦写，温湿水

SENSYLINK

温度传感器产品 CT1820B

MP

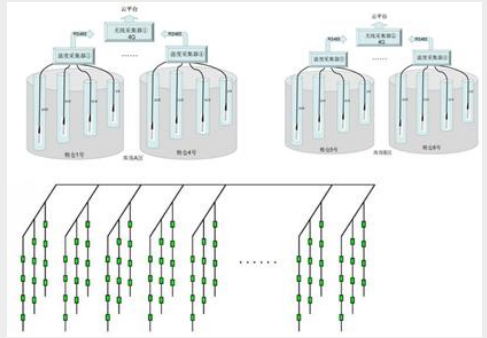
特点

- 工作电压范围: **1.8V to 5.5V**
- 平均电流: 1.5uA (Typ.) at 1 Con/s
- 待机电流: 0.1uA (Typ.)
- 温度转换速度: 30ms @13-bit
- 温度分辨率: 0.0625°C
- 测温精度:
  ±0.5°C (最大值) 在温度区间-10°C~80°C
  ±1.5°C (最大值) 在温度区间-55°C~125°C
- **64-bit ROM ID**
- 单总线通信
- 无限次擦写内存
- 8-bit CRC校验
- 兼容DS18B20

8bits	48 bits	8 bits
CRC Code $[X^8 + X^5 + X^4 + 1]$	Serial Number [48-bit, factory trimmed]	Family Code [0x28]
MSB LSB	MSB LSB	MSB LSB

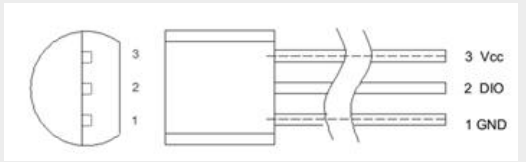
应用场景

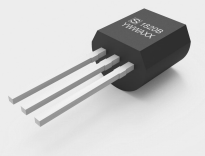
- 粮仓测温
- 工业系统



封装

TO-92





TO-92S-2

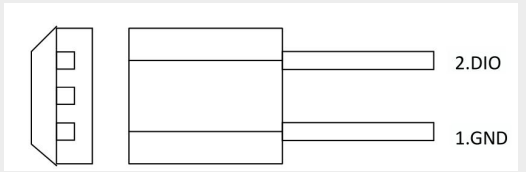


Table 1. 16-bit Temperature Data Format [MSB, LSB]

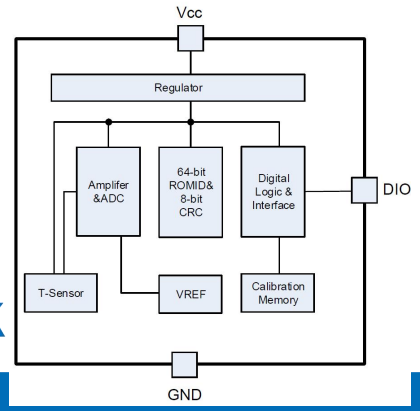
Temperature (°C)	16-bit Digital Output (HEX)	16-bit Digital Output (BIN)
+150.0000	0x0960	0000, 1001, 0110, 0000
+125.5625	0x07D9	0000, 0111, 1101, 1001
+85.9375	0x055F	0000, 0101, 0101, 1111
+25.0625	0x0191	0000, 0001, 1001, 0001
+10.1250	0x00A2	0000, 0000, 1010, 0010
+0.6875	0x000B	0000, 0000, 0000, 1011
0.0000	0x0000	0000, 0000, 0000, 0000
-0.5000	0xFFF8	1111, 1111, 1111, 1000
-10.1250	0xFF5E	1111, 1111, 0101, 1110
-25.0625	0xFE6F	1111, 1110, 0110, 1111
-50.0000	0xFCE0	1111, 1100, 1110, 0000

Table 2. Temperature Data in Register

	Byte Address	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
LSB	0x00	2^3	2^2	2^1	2^0	2^{-1}	2^{-2}	2^{-3}	2^{-4}
Celsius degree[°C]		8	4	2	1	0.5	0.25	0.125	0.0625
MSB	0x01	S	S	S	S	2^7	2^6	2^5	2^4
Celsius degree[°C]		sign	sign	sign	sign	128	64	32	16

Table 3. Temperature Limit Threshold Bit Definition

	Byte Address	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
TH	0x02	S	2^6	2^5	2^4	2^3	2^2	2^1	2^0
Celsius degree[°C]		sign	64	32	16	8	4	2	1
Default [0x55, 85°C]		0	1	0	1	0	1	0	1
TL	0x03	S	2^6	2^5	2^4	2^3	2^2	2^1	2^0
Celsius degree[°C]		sign	64	32	16	8	4	2	1
Default [0x00, 0°C]		0	0	0	0	0	0	0	0



Byte Address	Attribution (Note5)	Register Definition		Default Value
		Name	Description	
0x00	R/O	TLSB	Temperature Data, LSB Byte	0x50
0x01	R/O	TMSB	Temperature Data, MSB Byte	0x05
0x02	R/W	TH	Upper Alarm trigger Temperature	0x55
0x03	R/W	TL	Lower Alarm trigger Temperature	0x00
0x04	R/O	CONFIG	Configuration Register	0x6F
0x05	R/O	Reserved	Reserved Byte 0	0x00
0x06	R/O	Reserved	Reserved Byte 1	0x00
0x07	R/O	Reserved	Reserved Byte 2	0xFF
0x08	R/O	CRC	CRC Code Byte (8-bit)	0x2E

Part 1	Part 2	Part 3
Reset	ROM Function Command and/or Device Function Command	Data Tx/Rx
1. Device Reset Pull-low DIO pin with 450us to 650us duration.	1. ROM Function Command, including: 1). Read ROM.....0x33 2). Match ROM.....0x55 3). Search ROM.....0xF0 4). Skip ROM.....0xCC 5). Search Temperature Alarm ROM ID.....0xEC 2. Device Function Command, including: 1). Write Register.....0x4E 2). Read Register.....0xBE 3). Temperature Conversion.....0x44 4). Read Power Mode.....0xB4 5). Recall TH, TL from Memory.....0xB8 6). Copy TH, TL Register.....0x48 7). Load data from Memory into Register.....0xC7	Including, 1. Read Data from the chip, or 2. Write Data into register.

SENSYLINK

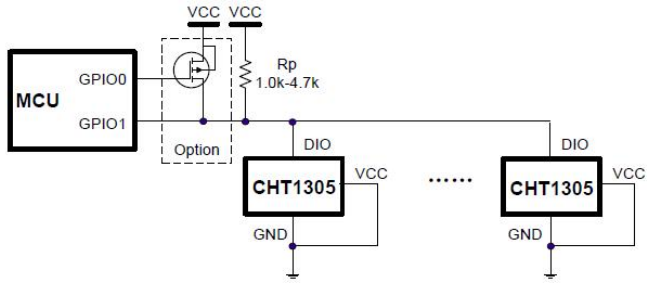
温湿度传感器产品 CHT1305C

MP

特点

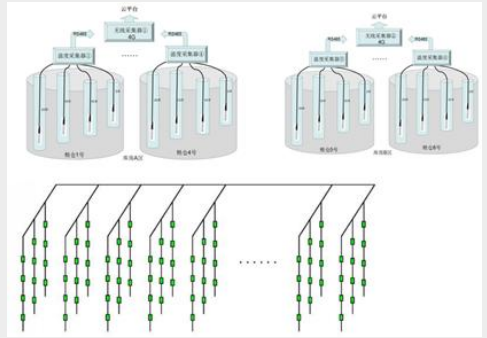
- 工作电压: 2.2V to 5.5V
- 平均电流: 1.8uA(Typ.)
- 待机电流: 0.1uA(Typ.)
- 测温精度: ±0.5°C@0°C~50°C
- 测湿精度: ±5.0%RH(Max.)@ 20~80 %RH
- 640-bit 存储空间
- 单总线通信，与温度芯片DC18B20可以兼容~（0X2E vs 0X28）
- 支持防水透气膜
- 支持水分换算
- 支持腐蚀性气体环境下工作
- 无限次擦写内存

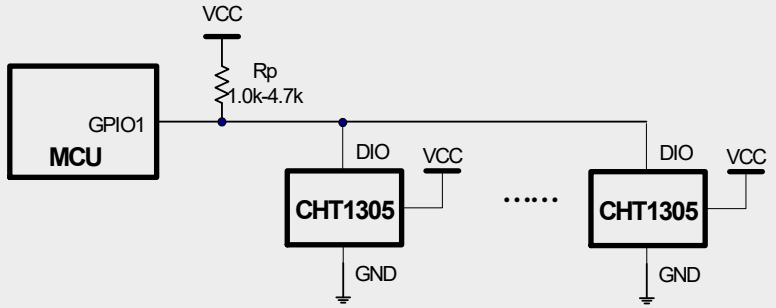
8 bits	48 bits	8 bits
CRC Code [$X^8 + X^5 + X^4 + 1$]	Serial Number [48-bit, factory trimmed]	Family Code [0x2E]



应用场景

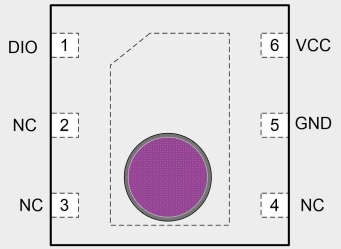
- 粮仓测温湿水
- 工业系统

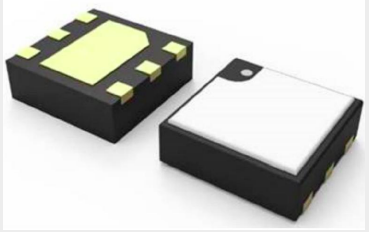




封装

DFN6L





SENSYLINK

Temperature (°C)	13-bit Digital Output (HEX)	13-bit Digital Output (BIN)
+150.0000	0x0960	0 0 0 0, 1 0 0 1, 0 1 1 0, 0 0 0 0
+125.0000	0x07D0	0 0 0 0, 0 1 1 1, 1 1 0 1, 0 0 0 0
+85.0000	0x0550	0 0 0 0, 0 1 0 1, 0 1 0 1, 0 0 0 0
+25.0625	0x0191	0 0 0 0, 0 0 0 1, 1 0 0 1, 0 0 0 1
+10.1250	0x00A2	0 0 0 0, 0 0 0 0, 1 0 1 0, 0 0 1 0
+0.5000	0x0008	0 0 0 0, 0 0 0 0, 0 0 0 0, 1 0 0 0
0.0000	0x0000	0 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0
-0.5000	0xFFF8	1 1 1 1, 1 1 1 1, 1 1 1 1, 1 0 0 0
-10.1250	0xFF5E	1 1 1 1, 1 1 1 1, 0 1 0 1, 1 1 1 0
-25.0625	0xFE6F	1 1 1 1, 1 1 1 0, 0 1 1 0, 1 1 1 1
-50.0000	0xFCE0	1 1 1 1, 1 1 0 0, 1 1 1 0, 0 0 0 0

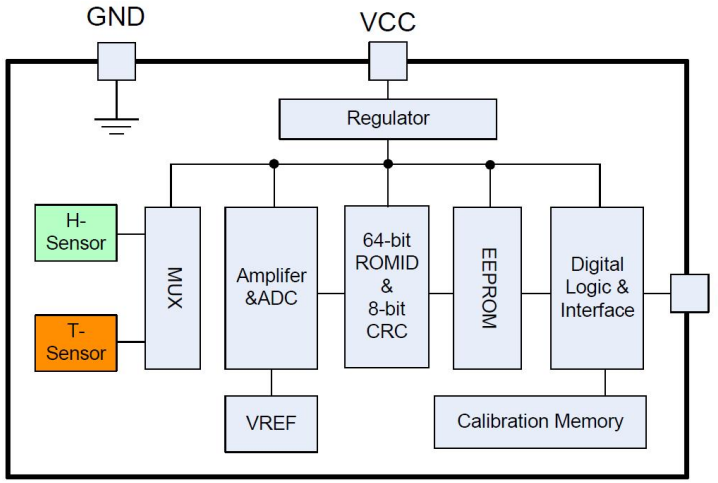
	Byte Address	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
LSB	0x00	2^3	2^2	2^1	2^0	2^{-1}	2^{-2}	2^{-3}	2^{-4}
Celsius degree[°C]		8	4	2	1	0.5	0.25	0.125	0.0625
MSB	0x01	S	S	S	S	2^7	2^6	2^5	2^4
Celsius degree[°C]		sign	sign	sign	sign	128	64	32	16

Table 9. Temperature Threshold Bit Definition

	Byte Address	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
TH	0x02	S	2^6	2^5	2^4	2^3	2^2	2^1	2^0
Celsius degree[°C]		sign	64	32	16	8	4	2	1
Default [0x55, 85°C]		0	1	0	1	0	1	0	1
TL	0x03	S	2^6	2^5	2^4	2^3	2^2	2^1	2^0
Celsius degree[°C]		sign	64	32	16	8	4	2	1
Default [0x00, 0°C]		0	0	0	0	0	0	0	0

Byte Address	*Attribution	Register Definition		Default Value
		Name	Description	
0x00	R/O	TLSB	Temperature Data, LSB Byte	0x50
0x01	R/O	TMSB	Temperature Data, MSB Byte	0x05
0x02	R/W	TH	*Upper Alarm trigger Temperature	0x55
0x03	R/W	TL	*Lower Alarm trigger Temperature	0x00
0x04	R/W	CONFIG	*Configuration Register	0x7F
0x05	R/O	HLSB	Humidity Data, LSB Byte	0x00
0x06	R/O	HMSB	Humidity Data, MSB Byte	0x80
0x07	R/O	HH	*Upper Alarm trigger Humidity, HH	0xFF
0x08	R/O	CRC	CRC Code Byte (8-bit)	0x39

Part 1	Part 2	Part 3
Reset	ROM Function Command and/or Device Function Command	Data Tx/Rx
1. Device Reset	1. ROM Function Command, including: 1). Read ROM....0x33 2). Match ROM....0x55 3). Search ROM....0xF0 4). Search Temperature Alarm....0xEC 5). Search Humidity Alarm....0xED 6). Skip ROM....0xCC 2. Device Function Command, including: 1). Write Register....0x4E 2). Read Register....0xBE 3). Temperature Only Conversion....0x44 4). Humidity Only Conversion....0x42 5). Temperature (first) and Humidity Conversion (second)....0x46 6). Read Power Mode....0xB4 7). Recall Memory....0xB8 8). Copy Register....0x48 9). Load data from Memory into Register....0xC7 10). Memory Erase (Page)....0xC1 11). Memory Read (Byte)....0XF0 12). Memory Write (Byte)....0xC5	Including, 1. Read Data from the register or memory, or 2. Write Data into register or memory.



Humidity (%RH)	16-bit Digital Output (DEC)	16-bit Digital Output (HEX)	16-bit Digital Output (BIN)
100.0	65,535	0xFFFF	1 1 1 1, 1 1 1 1, 1 1 1 1, 1 1 1 1
85.0	55,705	0xD999	1 1 0 1, 1 0 0 1, 1 0 0 1, 1 0 0 1
50.0	32,768	0x8000	1 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0
30.5	19,988	0x4E14	0 1 0 0, 1 1 1 0, 0 0 0 1, 0 1 0 0
10.0	6554	0x199A	0 0 0 1, 1 0 0 1, 1 0 0 1, 1 0 1 0
0.0	0	0x0000	0 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0

	Byte Address	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
LSB	0x05	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
Decimal data		128	64	32	16	8	4	2	1
MSB	0x06	2^{15}	2^{14}	2^{13}	2^{12}	2^{11}	2^{10}	2^9	2^8
Decimal data		32768	16384	8192	4096	2048	1024	512	256

Table 10. Humidity Threshold Bit Definition

	Byte Address	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
LSB	0x07	2^{15}	2^{14}	2^{13}	2^{12}	2^{11}	2^{10}	2^9	2^8
Decimal data		32768	16384	8192	4096	2048	1024	512	256
Default [0xFF,99.6%RH]		1	1	1	1	1	1	1	1

Table 11. Memory Address

Page	Data & Address								
0	Data	Byte0	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
	Address	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07
	Data	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15
	Address	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
1	Data	Byte0	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
	Address	0x10	0x11	0x12	0x13	0x14	0x15	0x16	0x17
	Data	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15
	Address	0x18	0x19	0x1A	0x1B	0x1C	0x1D	0x1E	0x1F
2	Data	Byte0	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
	Address	0x20	0x21	0x22	0x23	0x24	0x25	0x26	0x27
	Data	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15
	Address	0x28	0x29	0x2A	0x2B	0x2C	0x2D	0x2E	0x2F
3	Data	Byte0	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
	Address	0x30	0x31	0x32	0x33	0x34	0x35	0x36	0x37
	Data	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15
	Address	0x38	0x39	0x3A	0x3B	0x3C	0x3D	0x3E	0x3F
4	Data	Byte0	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
	Address	0x40	0x41	0x42	0x43	0x44	0x45	0x46	0x47
	Data	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15
	Address	0x48	0x49	0x4A	0x4B	0x4C	0x4D	0x4E	0x4F

Total Memory: 5 pages, 16 bytes per page, 8 bits per byte, 5 * 16 * 8 = 640 bits.
Address Range: 0x00 to 0x4F.

畜牧应用

MP

- 高精度体温传感器 CT1711 精度±0.1℃
- ID识别芯片 CSA2401

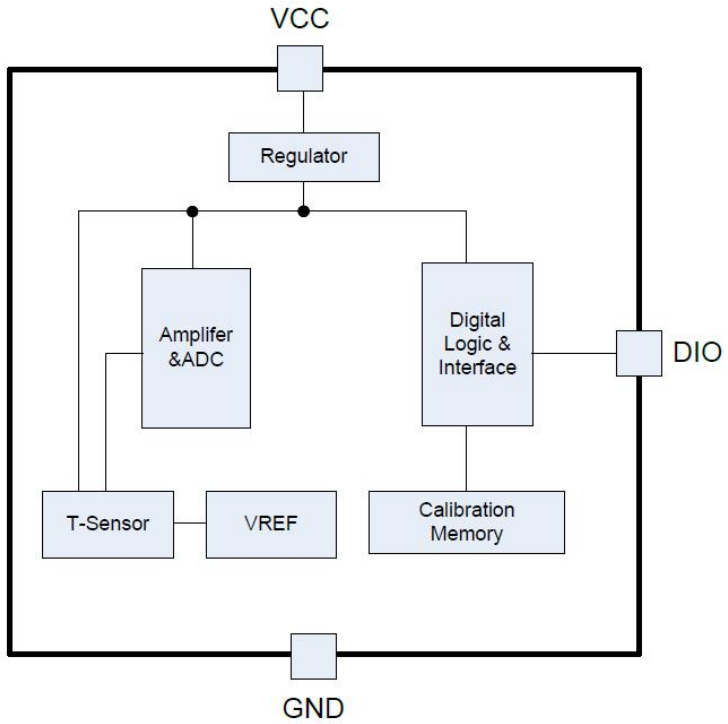
SENSYLINK

体温传感器产品 CT1711

MP

特点

- 工作电压范围: **1.8V to 5.5V**
- 平均电流: 4.5uA (Typ.)
- 温度转换速度: 120ms
- 测温精度:
  ±0.1°C 在温度区间30°C~45°C
- 单总线通信



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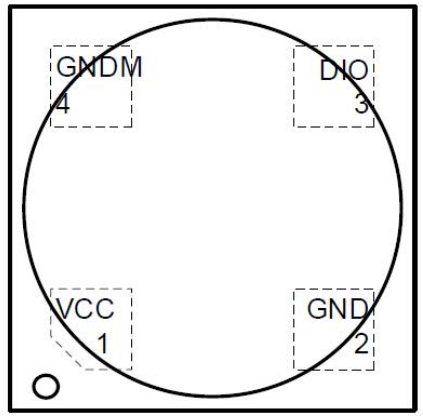
应用场景

- 牲畜测温耳标
- 皮下植入式测温

封装



MCLGA3x3-4(package code MC)

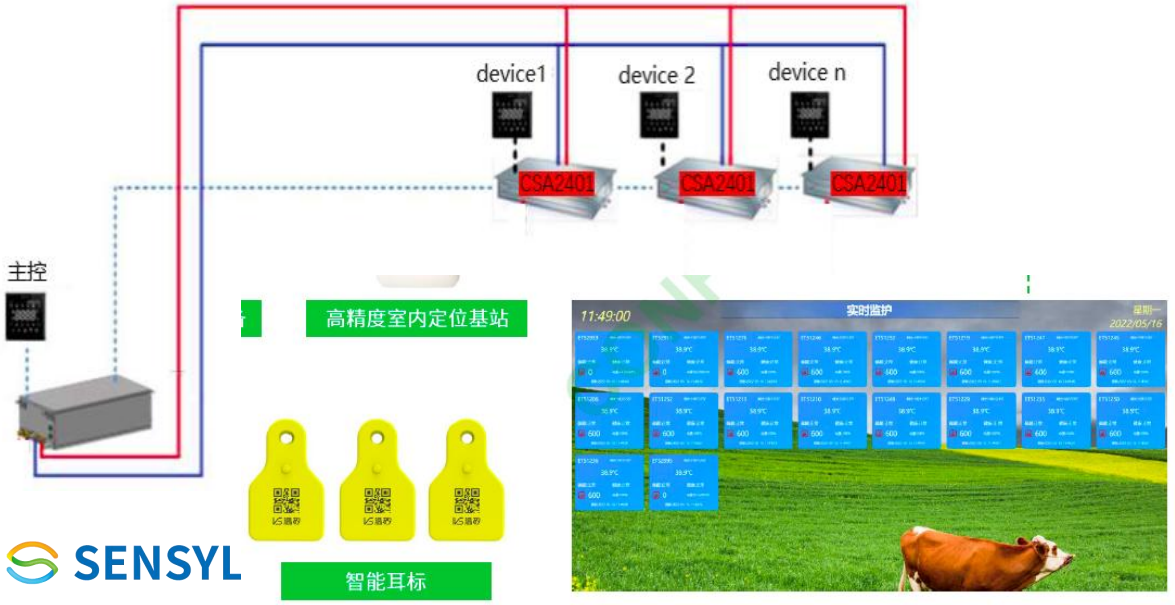
ID 芯片 CSA2401

MP

特点

- 工作电压范围: **2.5V to 5.5V**
- 平均电流: 1uA (Typ.)
- **64-bit ROM ID**
- 单总线通信
- 无限次擦写内存
- 8-bit CRC校验

8bits	48 bits	8 bits
CRC Code [$X^8 + X^5 + X^4 + 1$]	Serial Number [48-bit, factory trimmed]	Family Code [0x28]
MSB LSB	MSB LSB	MSB LSB

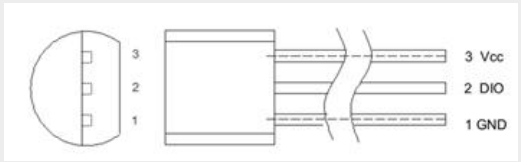


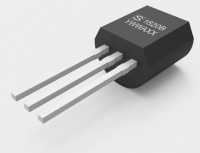
应用场景

- 设备编号

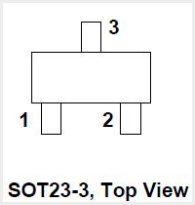
封装

TO-92





SOT-23-3



SOT23-3, Top View

NAME	Pin	
	TO-92	SOT23- 3
DATA (DQ)	2	1
GROUND	1	3
N.C. (Not Connect)	3	2

服务器生态链

各大服务器客户

inspur 浪潮 | 4FUSION | 中科曙光 Sugon | Lenovo | LCFC | Nettrix 宁畅 | H3C | HQ 华勤技术 | FOXCONN 鸿海科技集團 | Inventec | wistron

各互联网终端客户

ByteDance 字节跳动 | 阿里巴巴 Alibaba | Bai du 百度 | Tencent 腾讯 | 快手 拥抱每一种生活

各主流平台生态链

intel | AMD | AMPERE | Phytium 飞腾 | HYGON 中科海光

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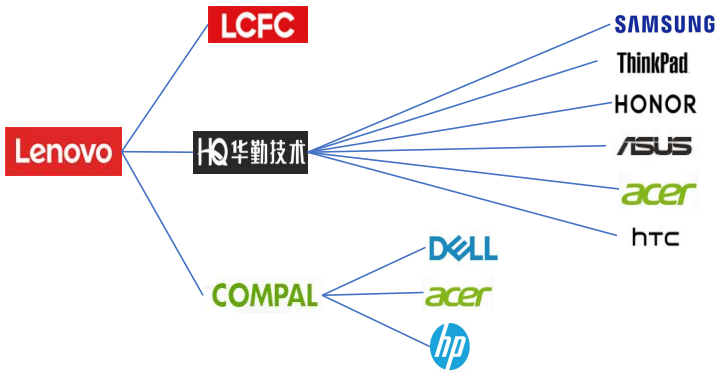
PC/笔电行业客户



Lenovo LCFC HQ华勤技术

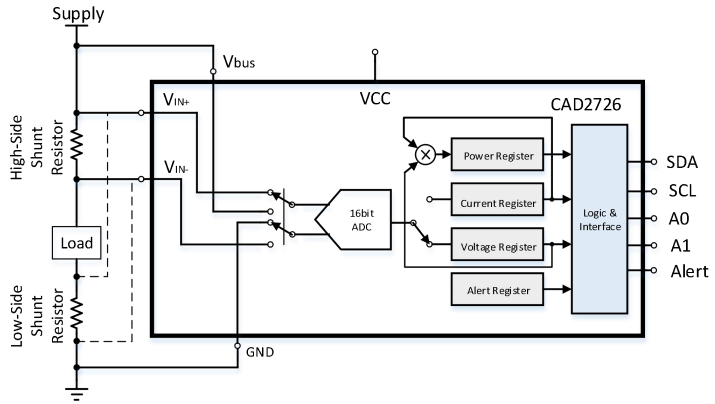
BXC 宝新创 Great Wall 长城 品质铸就长城

PC/笔电行业客户

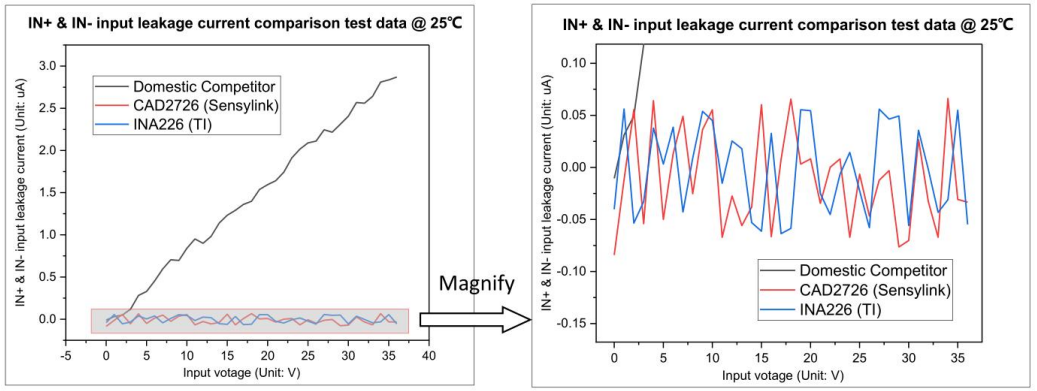
Device	Type	Application	Spec	Customer	Product
CTS7509	温度开关	过温保护	GMT G709T1Uf	联想	笔电
CT7432Y	温度传感器	温度检测	1L2R温感 NCT7719W EMC1413	联想	笔电
CSA2815	加密鉴权	原厂电池识别 原厂充电器识别	单线通信，上报数据	DELL	笔电
COA3001	环境光检测	屏幕亮度自适应	OPT3001		笔电
CAD27334	功率检测	生产治具	PAC1934	联想	笔电
CA99306	I3C电平转换	端口电平转换	TCA39306 PCA9306 LSF0102 LSF0204		笔电
CAS92221	USB开关	USB端口开关	TS3USB221		笔电
CAH1912	霍尔开关	笔记本合盖检测	AH1912	联想	笔电
CTF2301	风扇控制器	测温降温自适应	EMC2301		外置显卡风扇驱动

功率监测器品类
Power Monitor Category

产品种类	申矽凌物料	封装	竞争对手型号	供电范围	检测范围	通道数	输出类型	样品/量产
功率监控器	CAD2726MMR	VSSOP-10	INA226AIDGSR	2.7V-6V	0-36V	1	数字I2C输出	量产
		MSOP-10	TPA626-VR	2.7V-5.5V	0-36V	1	数字I2C输出	量产
	CAD2719K8R	SOT-23-8	INA219BIDCNR	3V-5.5V	0V-26V	1	数字I2C输出	2023.7.15
	CAD2720MMR	VSSOP-10	INA220AIDGSR	3V-6V	0V-26V	1	数字I2C输出	2023.7.15
	CAD27323QNR	QFN 4x4-16	INA3221AIRGVR	2.7V-5.5V	0V-26V	3	数字I2C输出	2024.Q1
	CAD2730QNR	QNF 3x3-16	INA230AIRGTR	2.7V-5.5V	0V-36V	1	数字I2C输出	样品
	CAD2731J12R	DSBGA-12	INA231AIYFDR	2.7V-5.5V	0V-28V	1	数字I2C输出	样品
	CAD2737MMR	MSOP-10	INA237AIDGSR	2.7V-5.5V	-0.3V-85V	1	数字I2C输出	2024.Q2
	CAD2738MMR	MSOP-10	INA238AIDGSR	2.7V-5.5V	-0.3V-85V	1	数字I2C输出	2024.Q2
	CAD2760MMR	TSSOP-16	INA260AIPW	2.7V-5.5V	0V-36V	1	数字I2C输出	/
	CAD27331/2/3/4	QFN 4x4-16/CSP-16	PAC1931/2/3/4	2.7V-5.5V	0 to 40V	4	数字I2C输出	2023.12



- 测得准
- 稳定可靠
- 放心用
- 做得全



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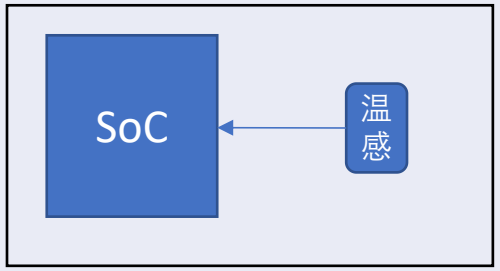
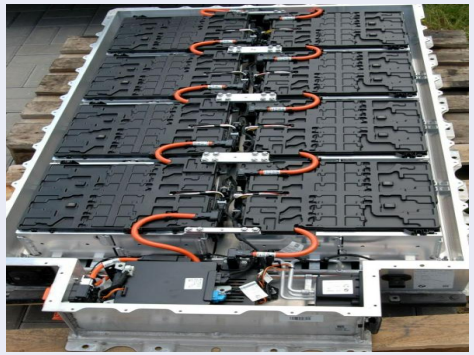
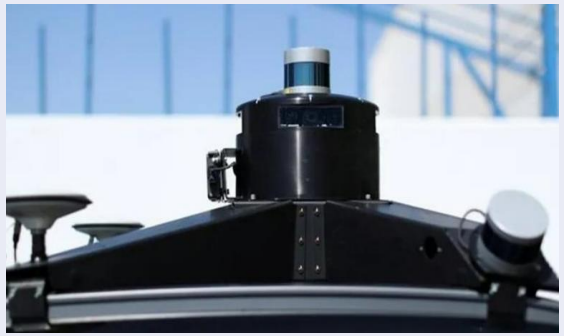
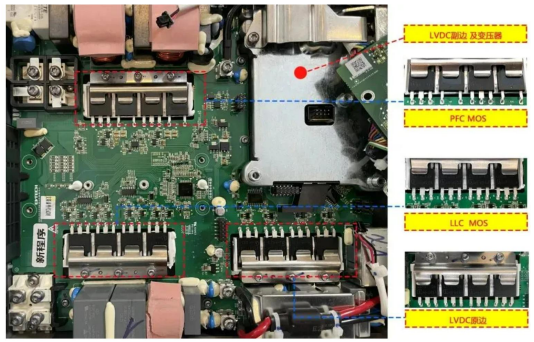
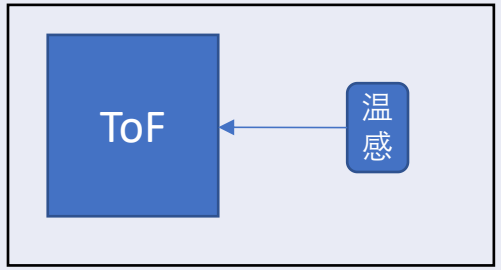
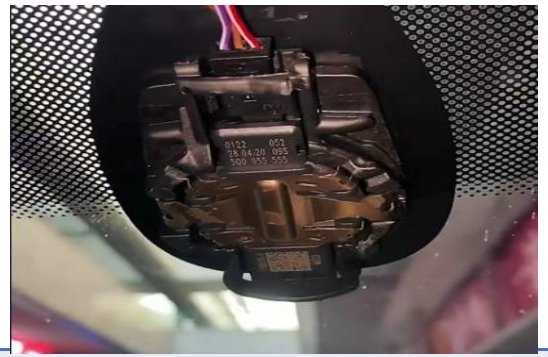
汽车温度传感器应用场景(1)

应用场景	应用图解	备注说明
域控板	 分解 	测试Soc温度或环境温度
电子压缩机	 分解 	测试MOS温度或环境温度
BMS	 分解 	测试电阻温度

汽车温度传感器应用场景(2)

应用场景	应用图解	备注说明
激光雷达 车载OL屏	 	测试主控温度或环境温度
OBC	 分解 	测试MOS温度
ToF摄像头	 分解 	测试主芯片温度

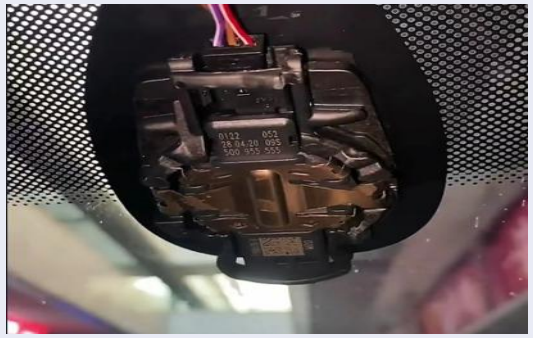
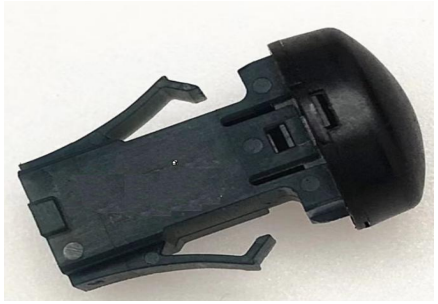
汽车温湿度传感器应用场景

应用场景	应用图解	备注说明
激光雷达	 分解 	测试板内湿度情况，避免起雾
雨量光模组	 分解 	除雾
电子后视镜 烟雾传感器 除雾模组	  	避免起雾、检测电池包内水汽

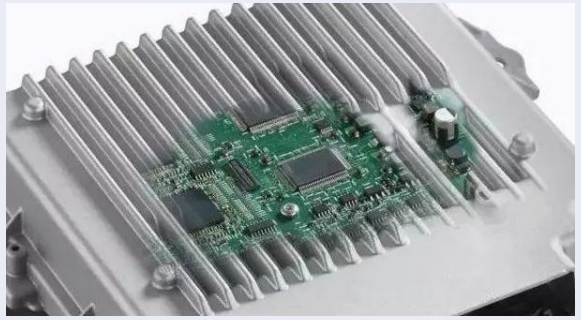
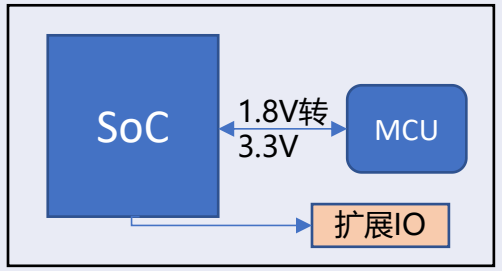
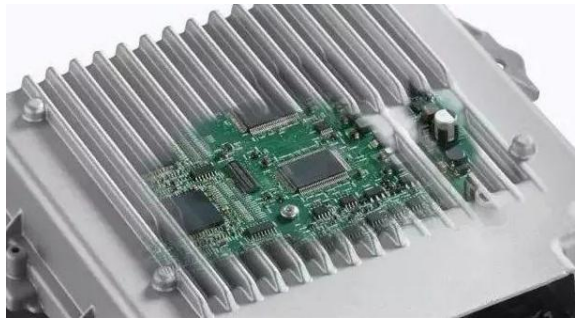
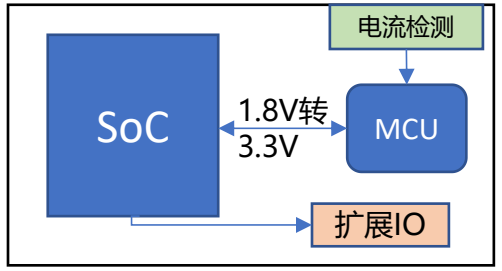
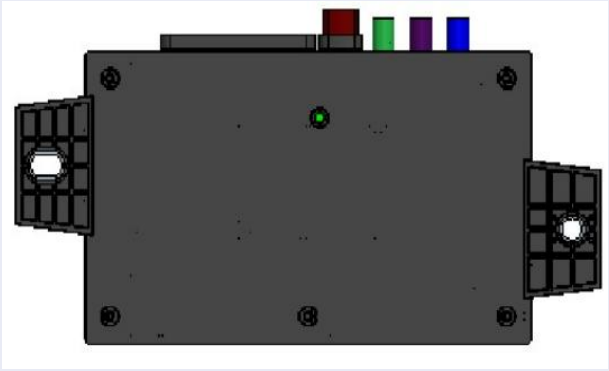
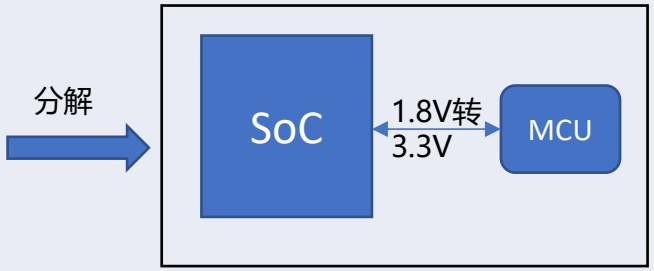
汽车光学传感器应用场景（1）

应用场景	应用图解	备注说明
流媒体后视镜	 分解 	防眩晕
摩托车/沙滩车仪表盘		屏幕亮度调节、大灯亮度调节
HUD		调节亮度

汽车光学传感器应用场景（2）

应用场景	应用图解	备注说明
雨量光模组	 分解 	雨量检测、自动大灯调节、Hud调节、阳光检测
烟雾传感器 自动大灯模组	 	电池包气溶胶检测、自动大灯调节
PM2.5模组	 分解 	PM2.5颗粒检测

汽车接口类/电流检测应用场景

应用场景	应用图解	备注说明
域控板	 分解 	电平转换、IO扩展
ADAS板	 分解 	电平转换、IO扩展、电流检测运放
T-box	 分解 	电平转换

申矽凌优势

- 产品设计之初，充分了解应用场景，产品实现P2P替代，较竞争对手，性能更优。
- 产品经过多家行业龙头企业大量使用，兼容性好，质量好，稳定性高。
- 充分为客户降本考虑，能够更好的控制成本，性价比高。
- 供应链交期短，交付稳定。
- 产品自主设计，拥有多项专利，不涉及知识产权问题。
- 以服务为本，客户需求响应积极。

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www.sensylink.com