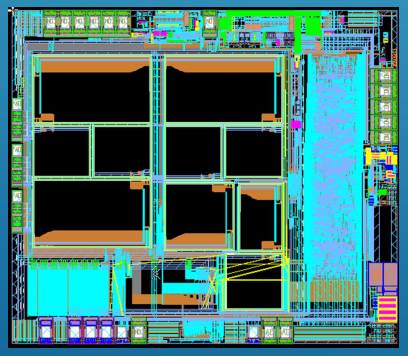
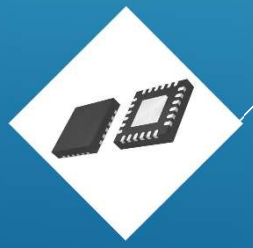
SPX-1 SMART PROXIMITY SENSOR ASIC

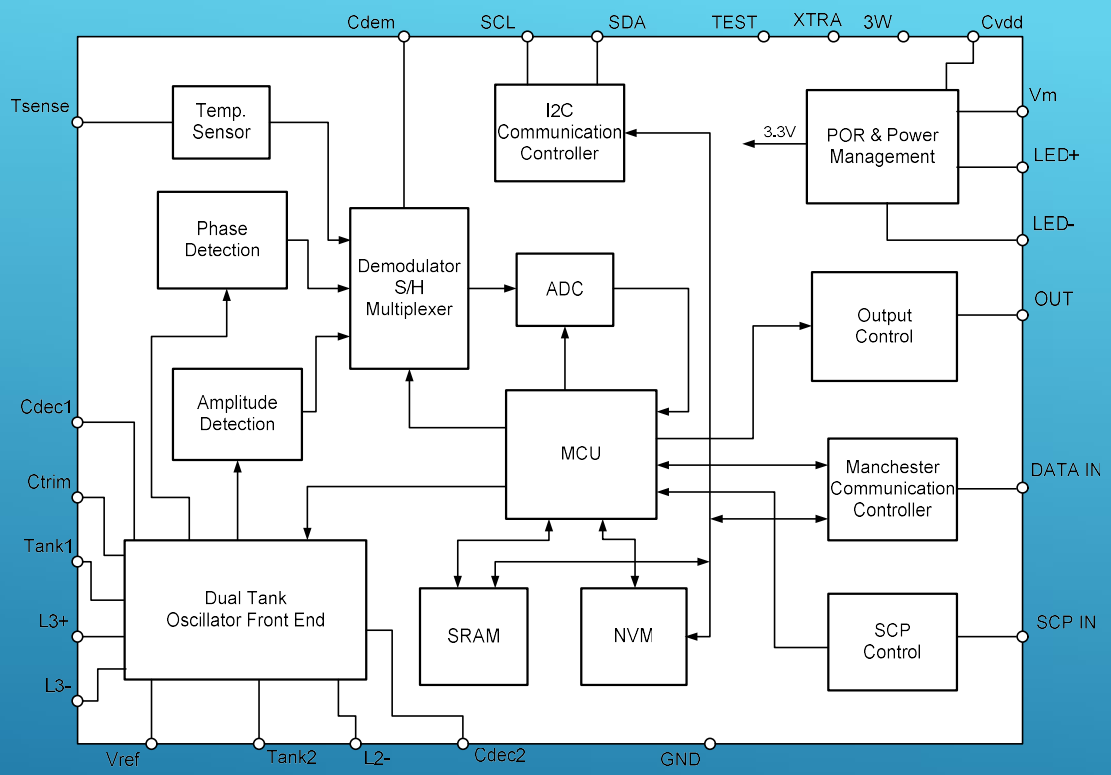
Summary

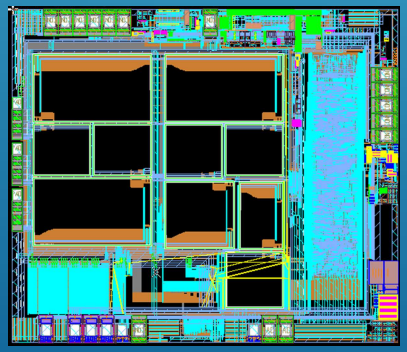
- Industry's first and only smart SoC for advanced inductive and capacitive proximity sensing
- Mixed signal ASIC (SoC) based on a patented technology platform
- Highly sensitive phase/amplitude differential signal measurement and learned TC compensation enable extended sensing distance over wide temperature range
- Correction factor 1 or ferrous, non-ferrous selective sensing modes can be achieved via ASIC configuration
- Capable of both DC and AC applications
- Can work with coreless flat (PCB) or cored coils





CHIP BLOCK DIAGRAM



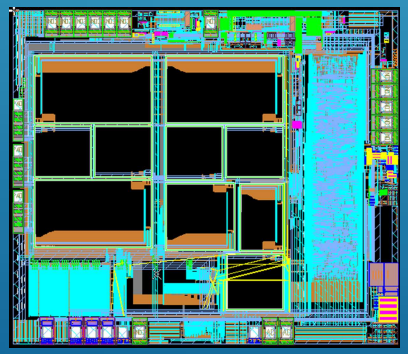


FEATURES

PATENTED ADVANCED TECHNOLOGY PLATFORM

ENABLES

HIGHEST SENSING DISTANCE

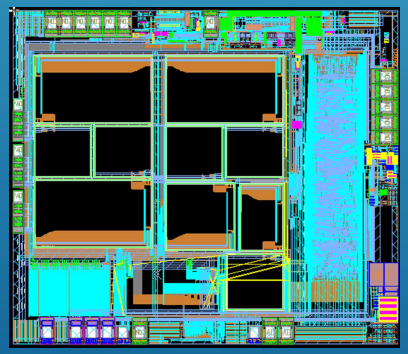


FEATURES

MIXED SIGNAL SoC WITH EMBEDDED MCU AND NONVOLATILE MEMORY

PROVIDES

UNPRECEDENTED INTELLIGENCE AND PROGRAMMABILITY

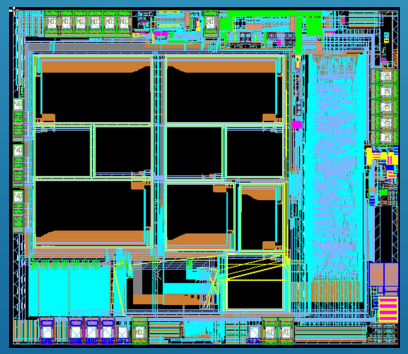


FEATURES

ADAPTIVE TC COMPENSATION THROUGH AUTONOMOUS MACHINE LEARNING

ACHIEVES

NEARLY PERFECT INDIVIDUAL TC COMPENSATION



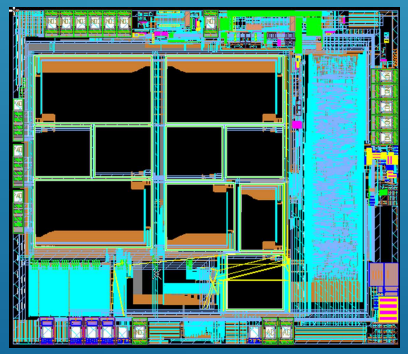
FEATURES

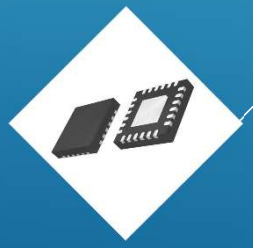
MULTIPLE CONFIGURABLE SENSING MODES:

CORRECTION FACTOR 1

FERROUS SELECTIVE

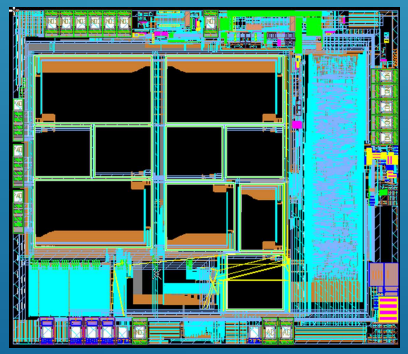
NON-FERROUS SELECTIVE

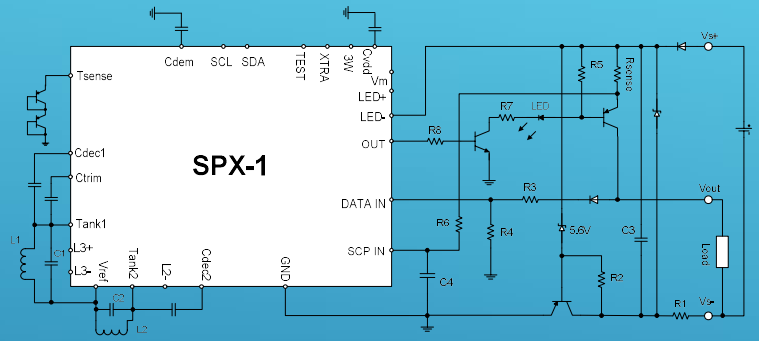


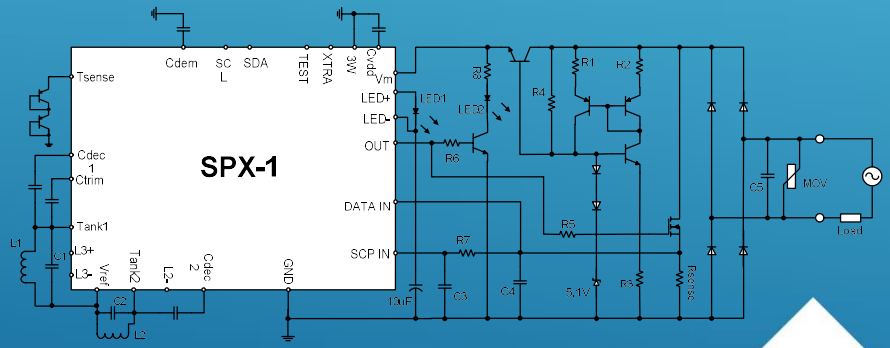


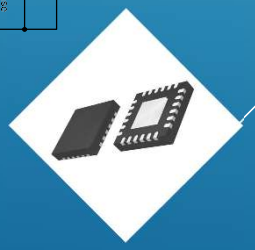
LOW CURENT CHIP DESIGN (<1.8mA CURRENT CONSUMPTION) ALLOWS FOR BOTH DC AND TWO WIRE AC/DC CONFIGURATIONS

FEATURES







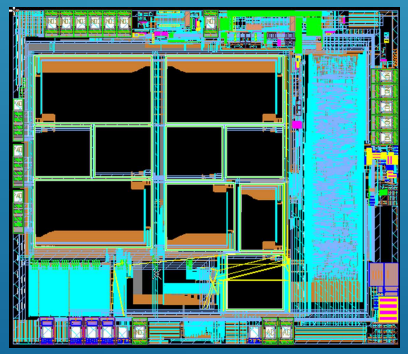


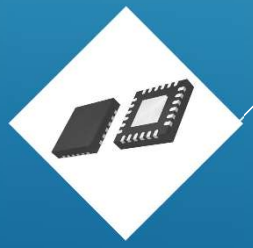
FEATURES

WORKS WITH CORELESS FLAT PCB COIL

TO ACHIEVE

HIGH LEVEL MAGNETIC FIELD IMMUNITY



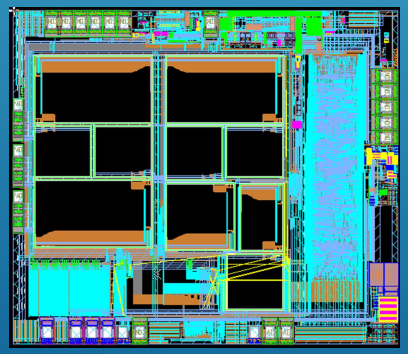


FEATURES

PLUG PROGRAMMABLE

NO EXTRA WIRE/PIN IS NEEDED

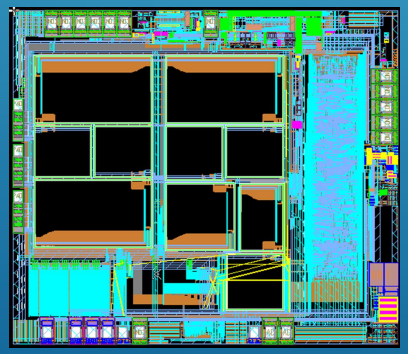
FOR ALL CALIBRATION AND PROGRAMMING PROCESS



FEATURES

WIDE OPERATING TEMPERATUE RANGE:

-40ºC TO 125 ºC

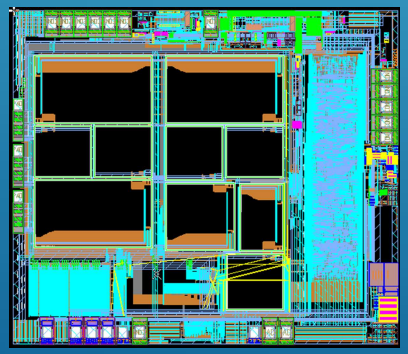


FEATURES

SMALL 4mm X 4mm QFN24 PACKAGE

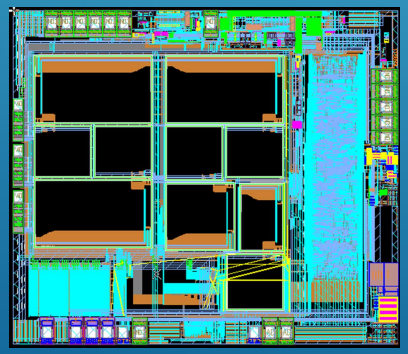
OR 2mm X 2mm TESTED DIE

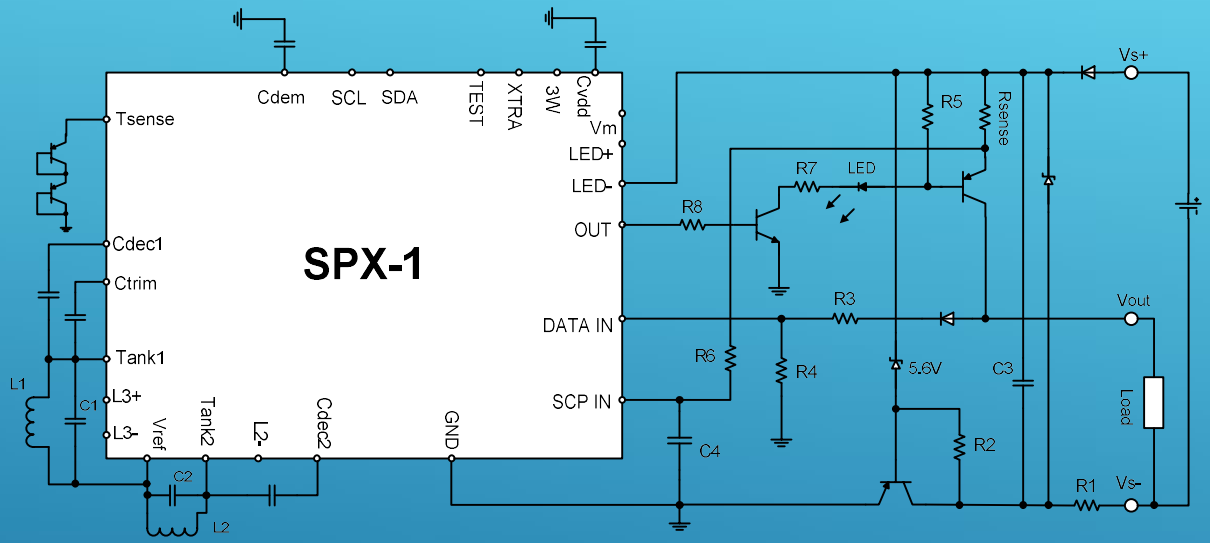
FOR SENSOR DESIGN WITH ALMOST ANY SIZE

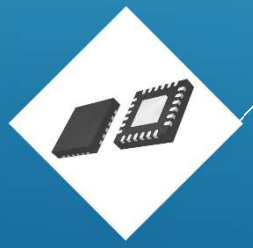


TYPICAL APPLICATION CIRCUIT

(DC SOURCE)

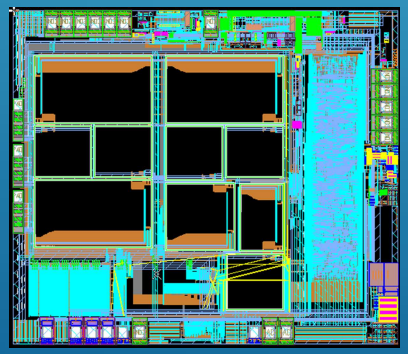


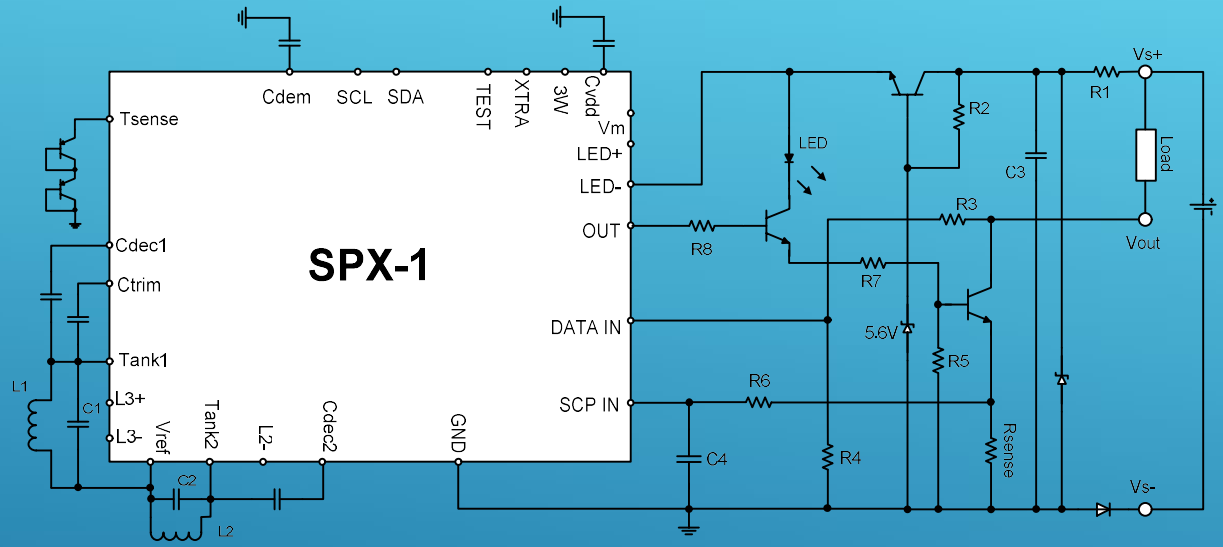




TYPICAL APPLICATION CIRCUIT

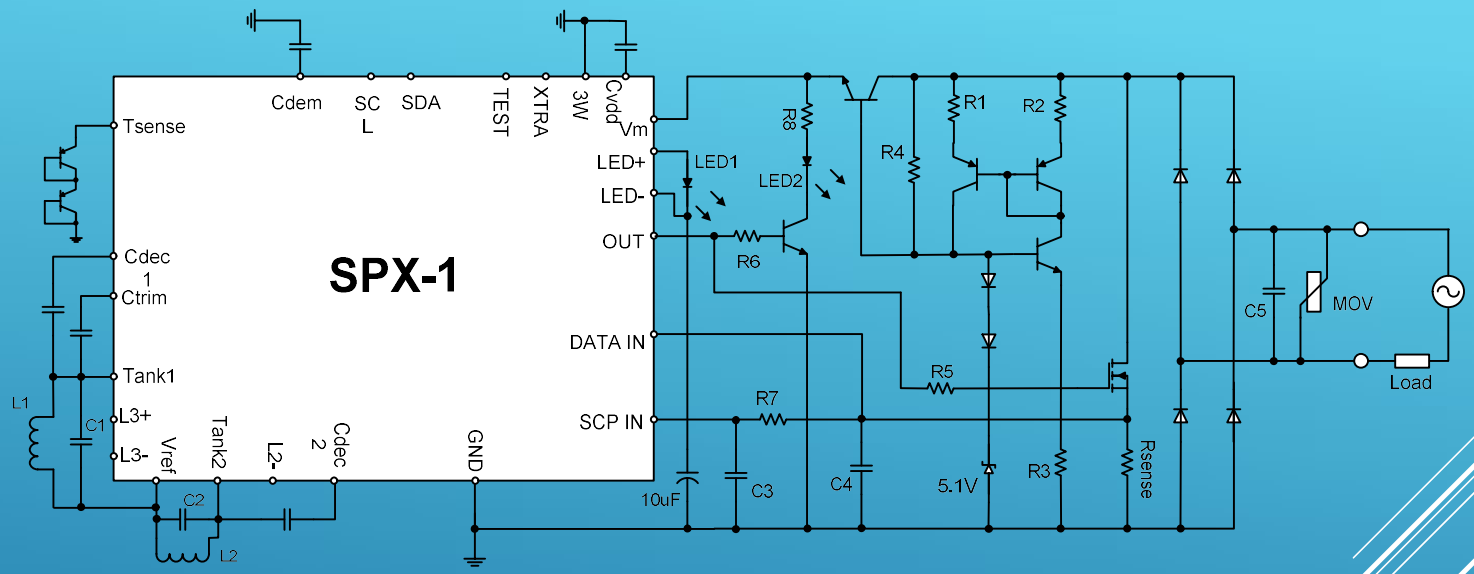
(DC SINK)

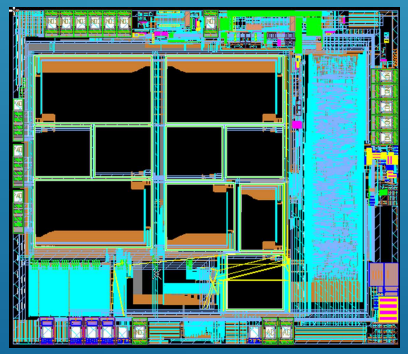




TYPICAL APPLICATION CIRCUIT

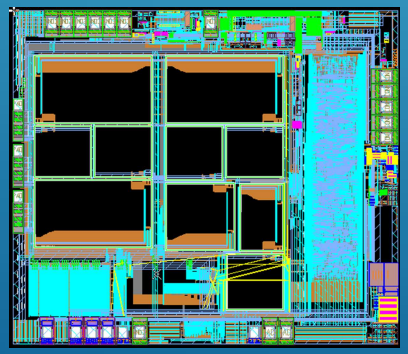
(TWO WIRE AC/DC)





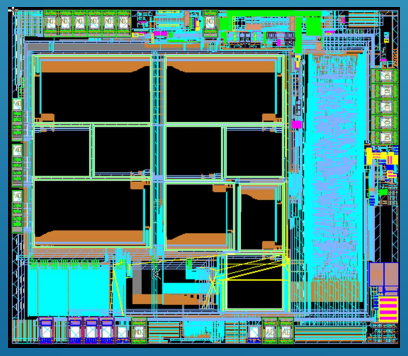
Applications

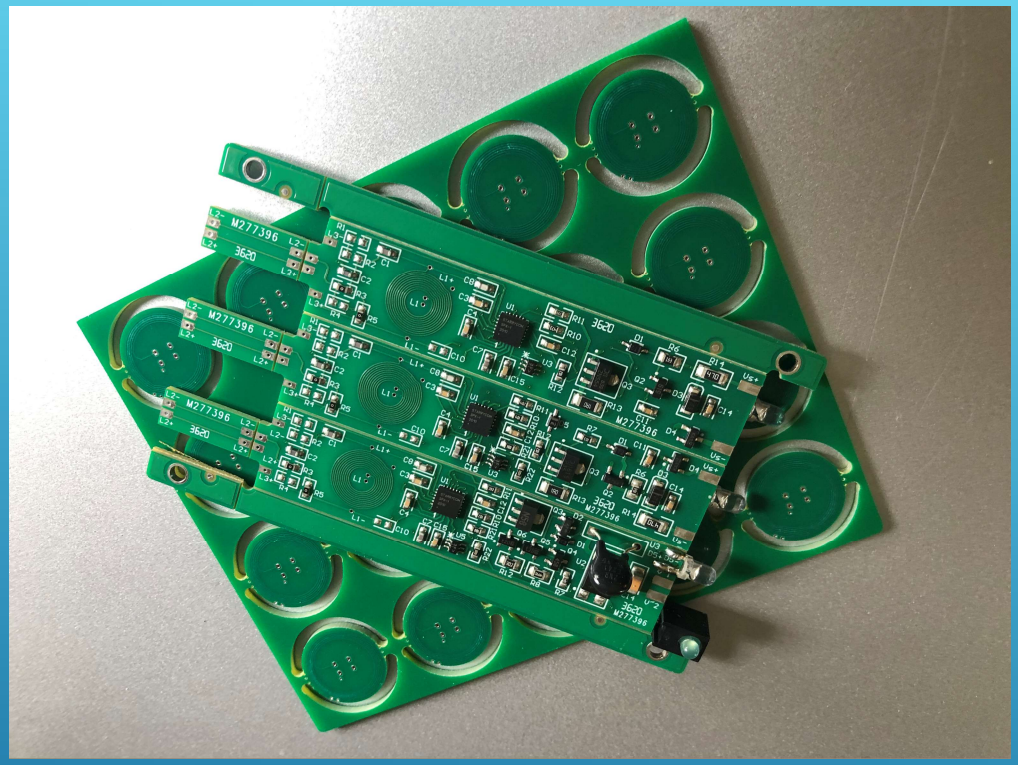
- FACTORY AUTOMATION
- PROCESS AUTOMATION
- MACHINE CONTROL
- TRANSPORTATION SYSTEM
- BUILDING AUTOMATION
- MATERIAL HANDLING
- SENSOR ARRAY BASED METAL SORTING
- ADVANCED CAPACITIVE PROXIMITY SENSING



TECHNICAL SUPPORT

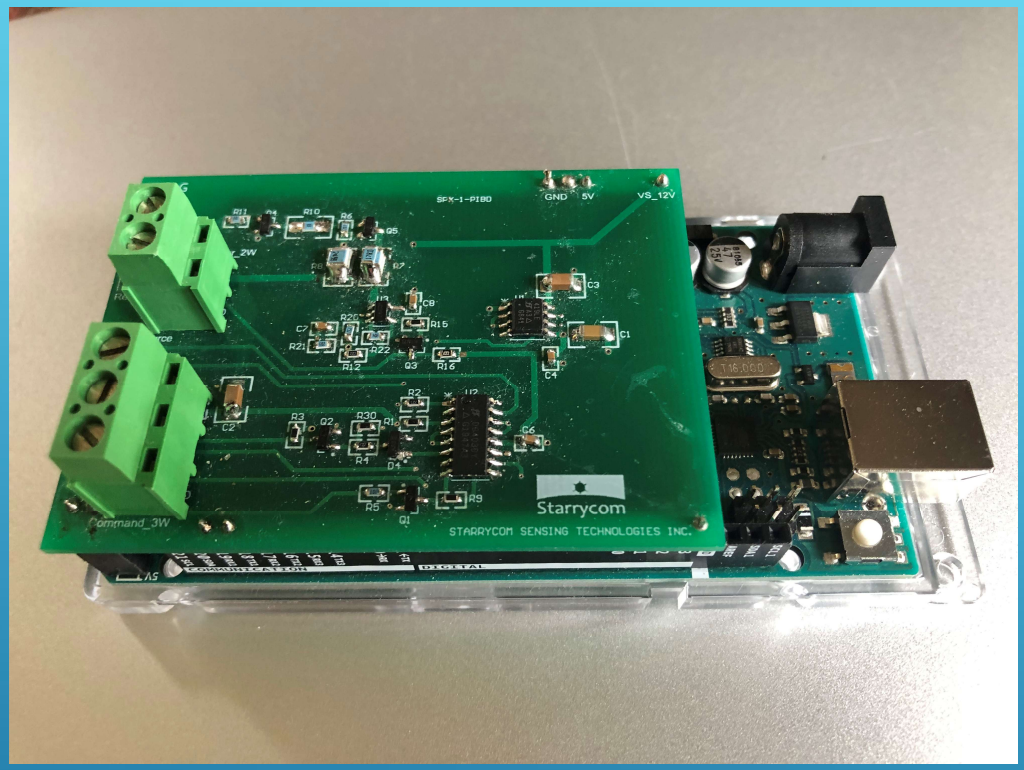
(EVALUATION BOARDS)

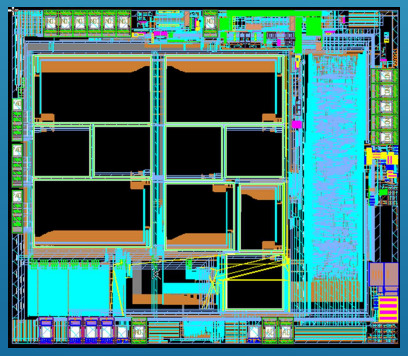




TECHNICAL SUPPORT

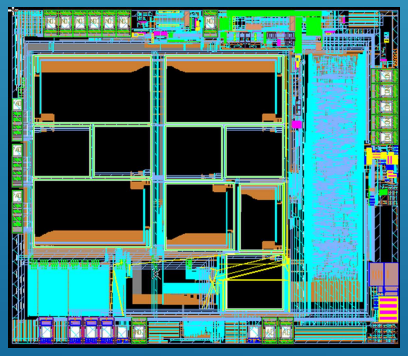
(CALIBRATOR/ PROGRAMMER)

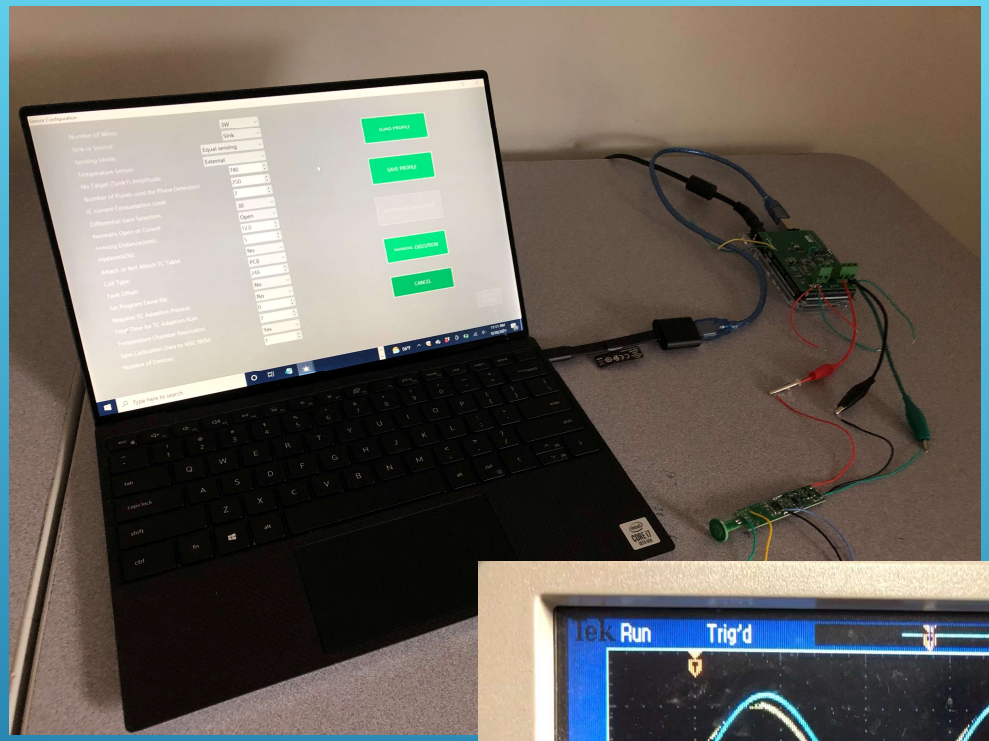


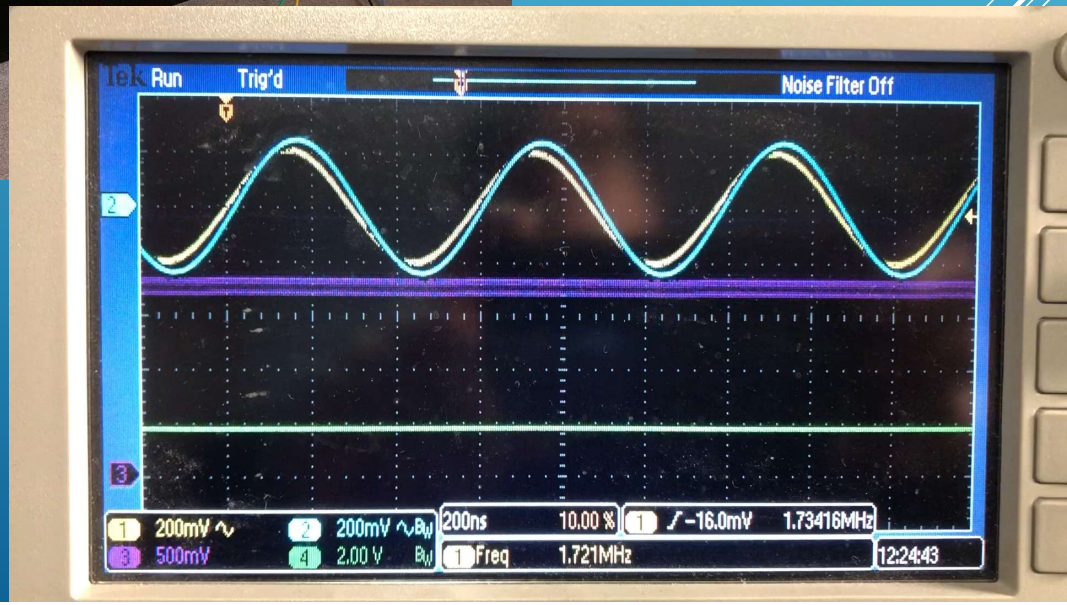


TECHNICAL SUPPORT

(CALIBRATION/ EVALUATION SYSTEM)

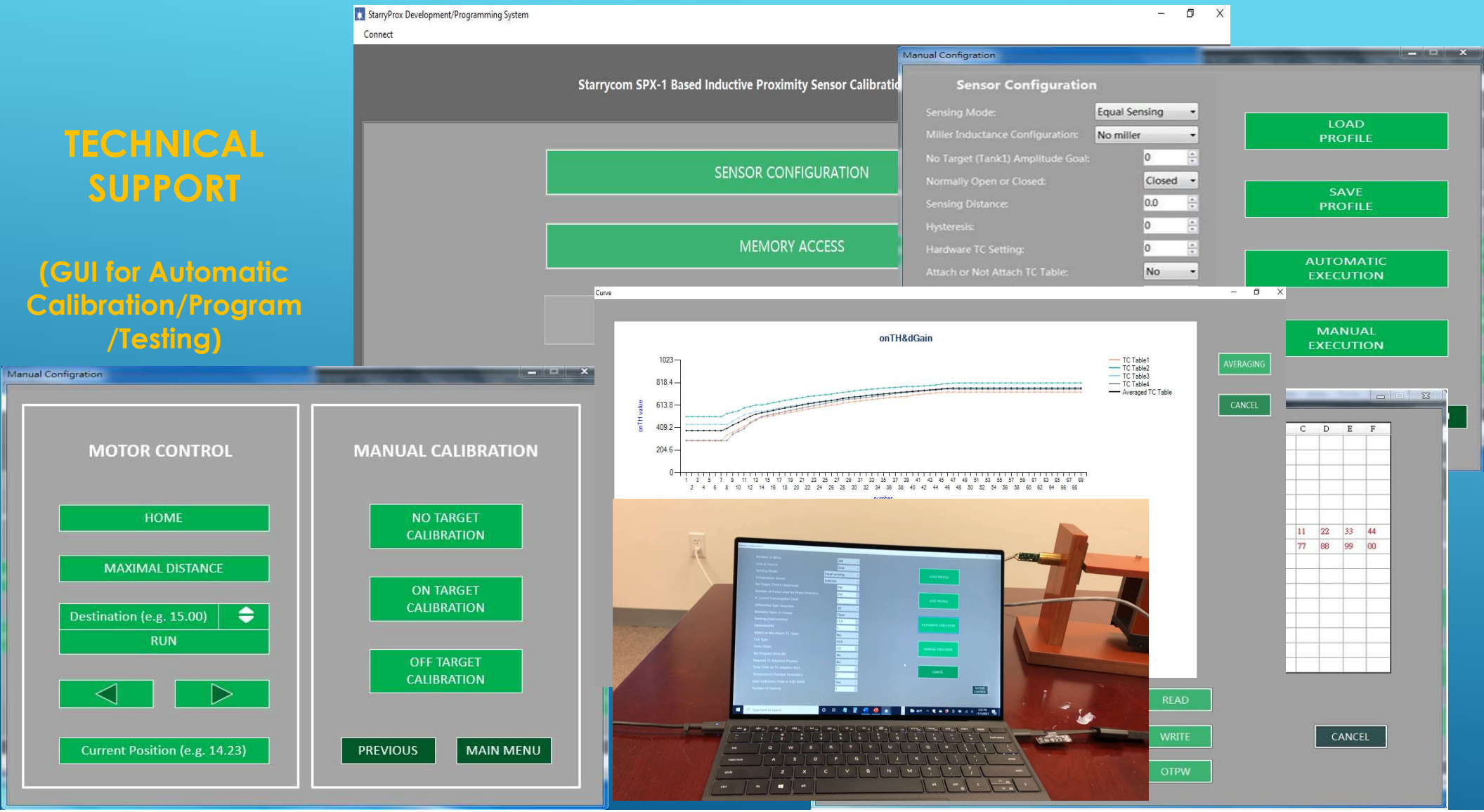






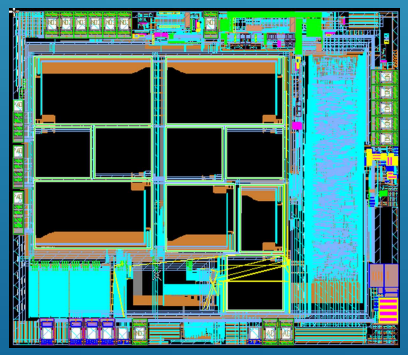
TECHNICAL SUPPORT

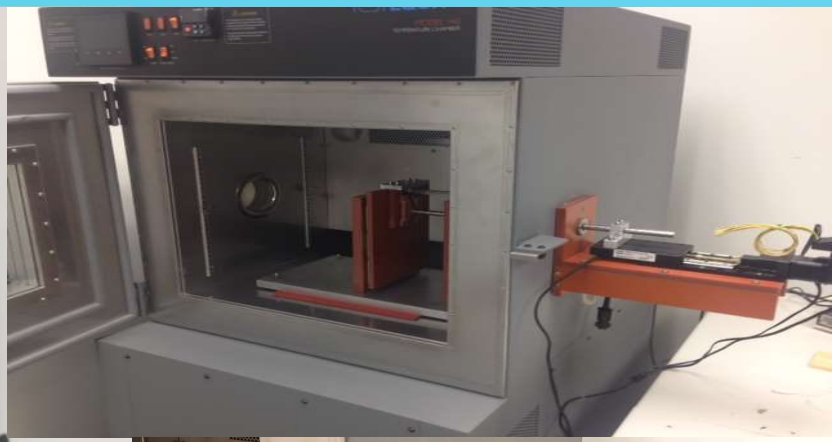
(GUI for Automatic Calibration/Program /Testing)



TECHNICAL SUPPORT

(8 Channel Calibration/Program System with Temparature Chamber and Step Motor Control)

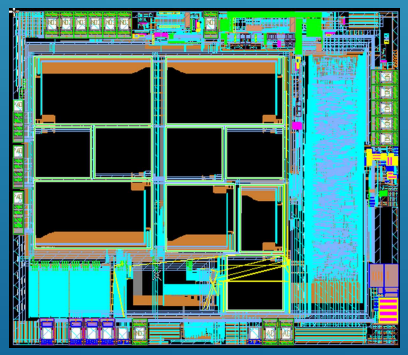




Competition

Starrycom's SPX-1 is the first and currently the only smart inductive proximity sensor SoC on the market. The only other chip that is comparable is the LMP91300 industrial inductive proximity sensor chip of Texas Instruments (TI). The following table shows a simple comparison:

	SPX-1	LMP91300	Comments
Programmability	Unlimited Times	One time	SPX-1 superior
TC Compensation	Adaptive, Machine Learning, Lookup Table	NTC	SPX-1 superior
Multi-detect modes	Factor 1, selective	Factor 1	SPX-1 superior
Metal selective	Yes	No	SPX-1 superior
Multi-coil design	Yes	No	SPX-1 superior
TC self-learning	Yes	No	SPX-1 superior
Embedded Control	Embedded MCU	Digital hardware	SPX-1 superior
Firmware upgrade	Yes	No	SPX-1 superior
DC and AC/DC	Yes	DC only	SPX-1 superior
Package size	4mm x 4mm	4mm x 5mm	SPX-1 superior
Price	$5↘ $?	$5 ↘ $?	Comparable



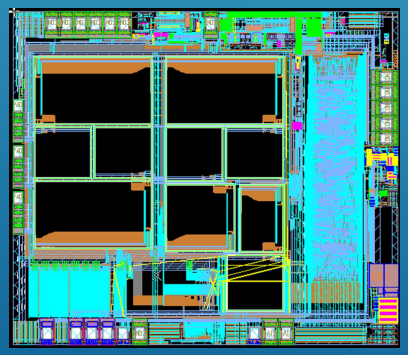
SAMPLES & TECHNICAL SUPPORT

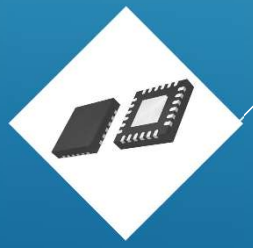
(PARTNERSHIP AND SUPPORT CONTACTS)

Tel: 978-761-5243

Fax: 978-727-8184

Email: info@starrycomsensing.com





Thank You!