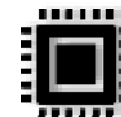


HopeRF Digital Isolator Introduction

Derek Zhu

Manufacturer of IoT Key Components



RF IC
射频芯片

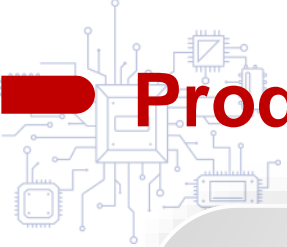


IoT Module
无线



Signal Chain
信号链产品

*Customized Solutions -
RF Modules & Wireless Networking
& More IoT Products*



Products

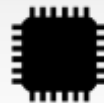
HOPERF

Wireless Connectivity



CMOSTEK

Sub-GHz



- Transmitter / Tx SoC
- Receiver / Rx
- Transceiver / TRx SoC

LoRa LoRaWAN



- LoRa Module
- LoRaWAN Networking Module

WiFi/BLE



- BLE SoC IC
- WiFi/BLE Module
- Turnkey Solutions

Wi-Sun



- Router Module
- Border Router Module
- Turnkey Solutions

matter



- Matter IC/Module
- Matter Certificates & Solutions
- Matter Module over THREAD

Signal-Chain



CMOSTEK

Isolator



- Digital isolators
- Isolated gate drives
- Isolated interface ICs
- Isolated amplifiers
- Isolated ADCs

Sensor



- Barometric pressure sensor
- Differential pressure sensor
- Gauge pressure sensor
- Absolute pressure sensor

Sensor



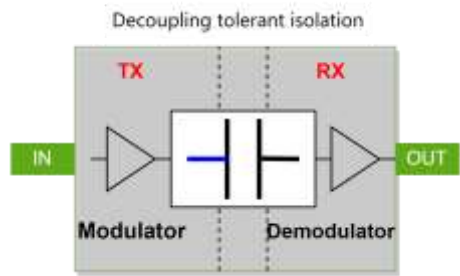
- Temperature & Humidity Sensor



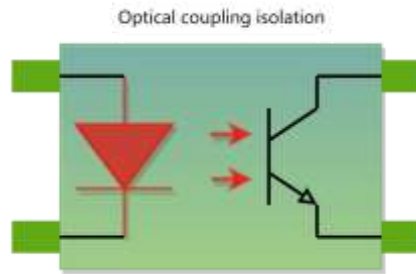
Digital Isolation Technologies

HOPERF

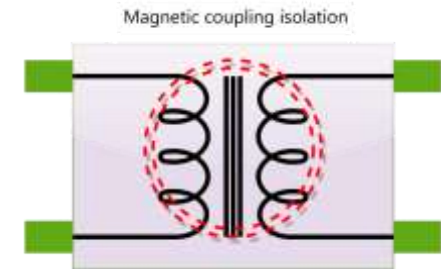
HopeRF adopts Capacitive coupling isolation technology, which is very close to Sub-G RF transceiver on both design principles and chip circuits.



Capacitive coupling isolation



photoelectric coupling isolation

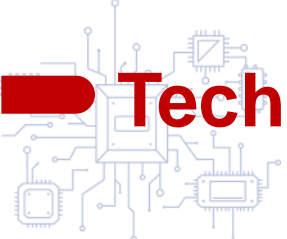


Magnetic coupling isolation

Comparison of advantages:

Compared with the traditional optical coupler, the capacitive coupler has great advantages in environmental temperature, isolation voltage, speed, signal propagation delay, anti-interference ability and power consumption.

Compared with magnetic coupling, power consumption and EMI have advantages. Due to the low frequency characteristic of capacitive coupling deficiency, it is difficult to integrate large-capacity capacitors. Therefore, signals should be transmitted by means of wireless transmission similar to remote control. OOK high-frequency modulation and demodulation are used to transmit signals, and the internal circuit of the wafer is relatively complex.

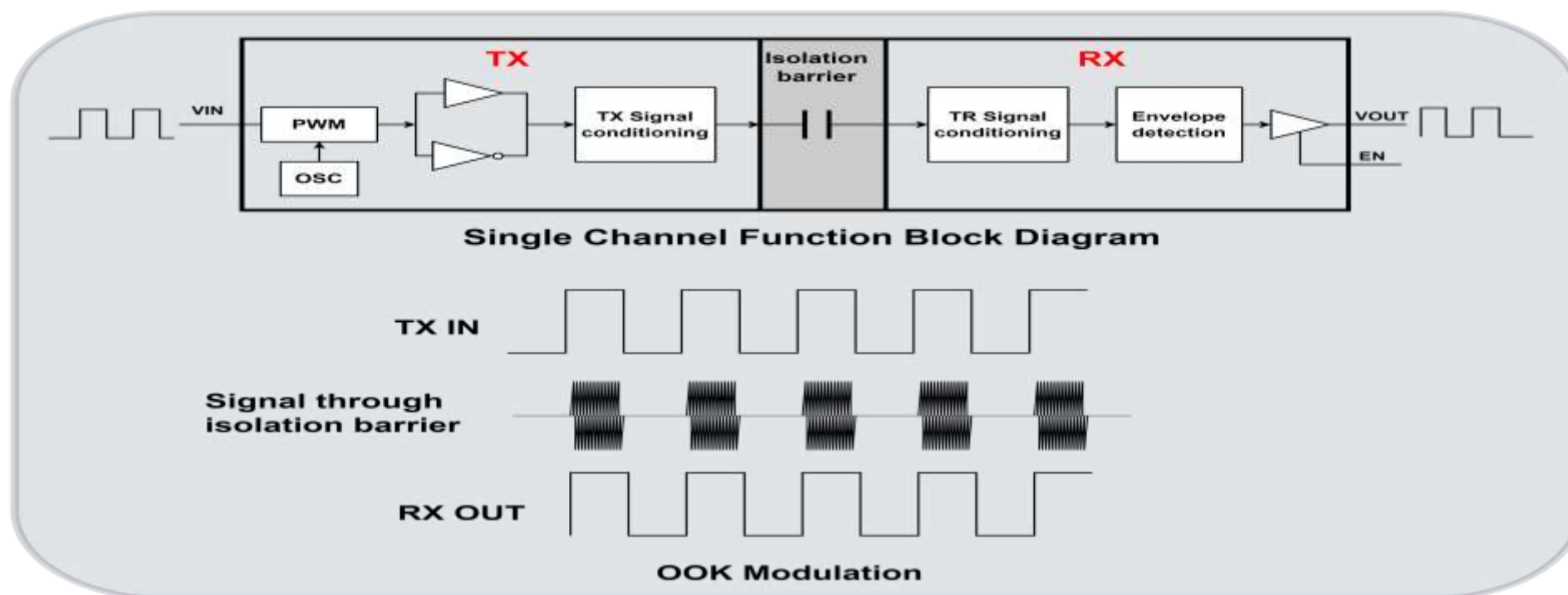


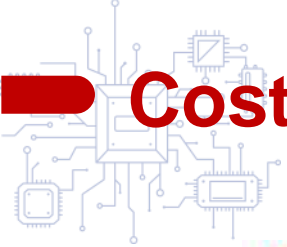
Technological Advantage

HOPERF

HopeRF's CMOSTEK product line (include wireless RF and digital isolater) has output 1 billion+ chips cumulatively for the past 5 years !

SUB-G RF transceiver and digital isolater are **very close** on both design principles and chip circuits.





Cost Advantage



HOPERF



Pin to Pin compatible

HopeRF digital isolators are compatible with most traditional isolators. Customers can directly replace them without changing the design, reducing the switching cost for customers and improving customer satisfaction.

It improves the product introduction efficiency, helps customers quickly respond to market changes, enhances customers' competitiveness in the market, and enables them to seize market share.



Cost advantage

Compared with international and domestic major manufacturers such as Texas Instruments, Analog Devices, NXP Semiconductors etc HopeRF's digital isolators offer higher cost-performance ratios and greater market competitiveness.

Through technological innovation and scaled production, we reduce customers' purchasing costs, enhance market competitiveness, and attract more customers to choose HopeRF products.



Performance advantage

By adopting advanced processes and designs, we ensure that our products exhibit excellent performance in terms of isolation voltage, transmission rate, and anti-interference, meeting customers' high standards.

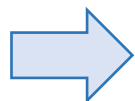
The high-performance and highly reliable product features make HopeRF's digital isolators more attractive in the market, earning customer trust and praise.



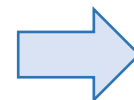
Leadtime Advantage

HOPERF

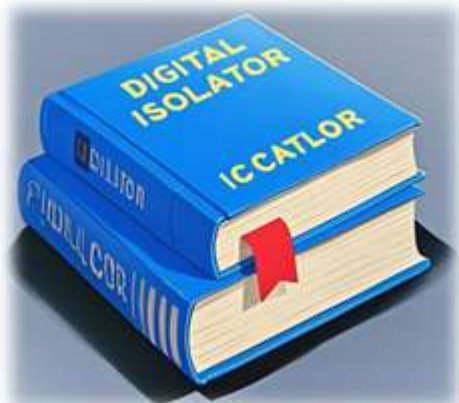
Thousands of part numbers in this industry

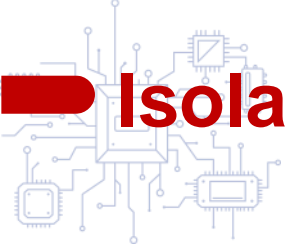


HopeRF adopts software defined isolators & flexible production



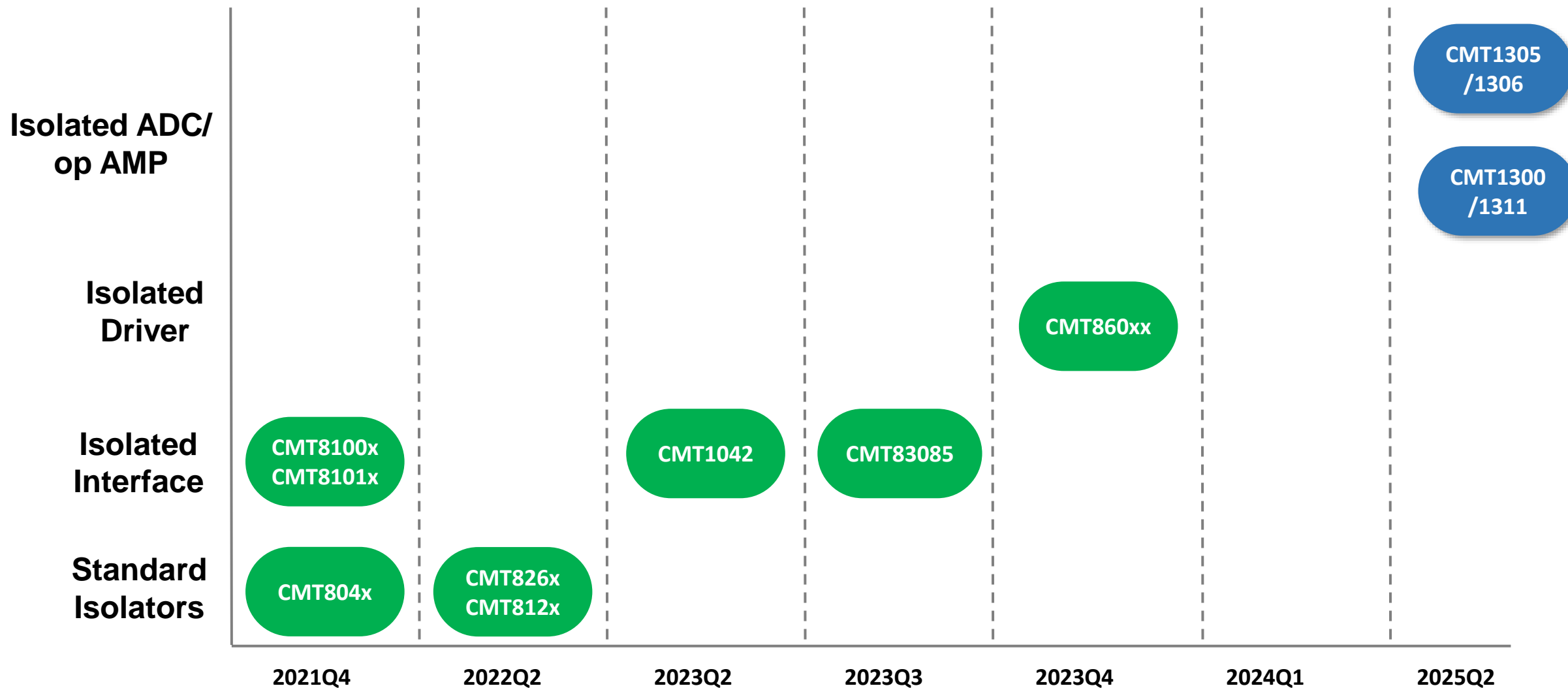
Lead time: 3 - 5 days! (exit factory)





Isolator Roadmap

HOPERF





Standard Isolators

HOPERF

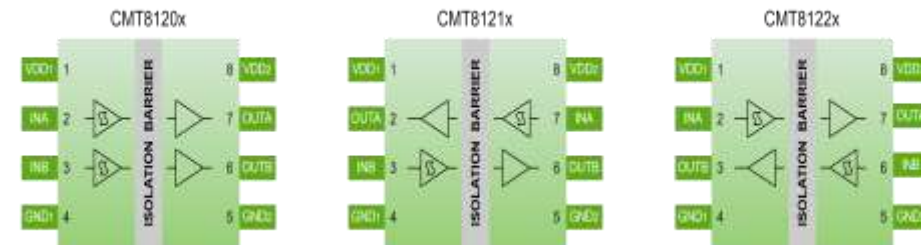
Features:

- Isolation voltage: 3750VRMS/5000VRMS
- Speed: DC to 150Mbps
- Super anti-interference capability CMTI: typ. 200kV/us
- Enhanced ESD protection HBM: $\pm 8\text{kV}$
- Life span: >40 years
- Low power consumption: 1.5mA/CH
- Low propagation delay: <15ns
- Voltage range: 2.5V to 5.5V
- Wide temperature range: $-40^{\circ}\text{C}\sim 125^{\circ}\text{C}$
- RoHS compliant
- Standard package SOP8/SOW8/SOP16/SOW16

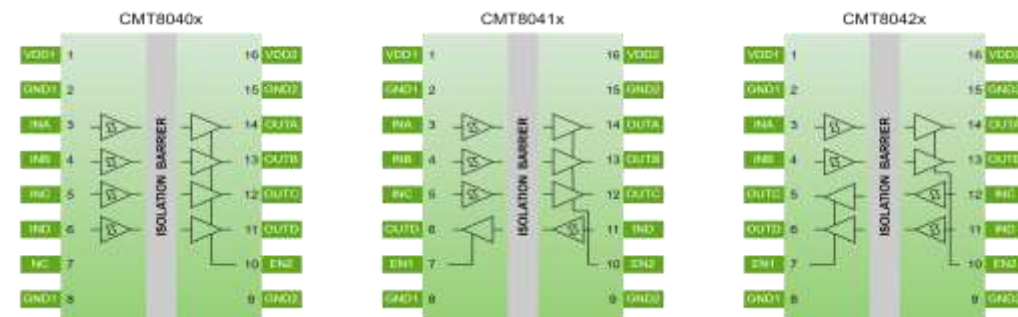
Safety certification:

- UL1577 qualified 3.75kVrms/5kVrms for 1 min.
- CQC qualified: Conform to GB4943.1 -2011
- CSA qualified: Components conform to 5A
- VDE qualified: DIN V VDE V 0884-11:2017-01

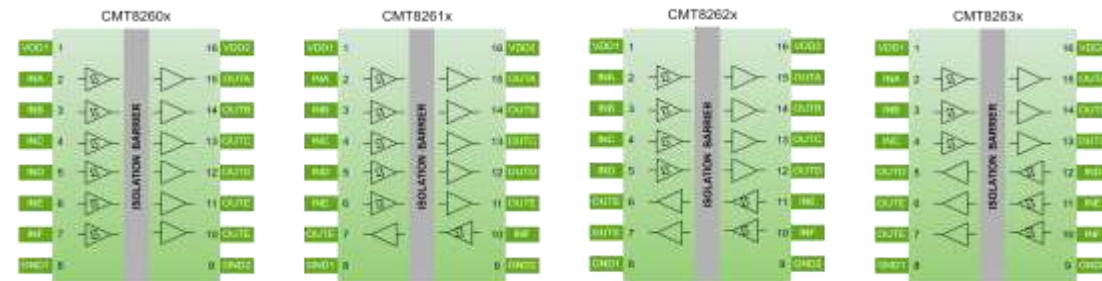
2CH

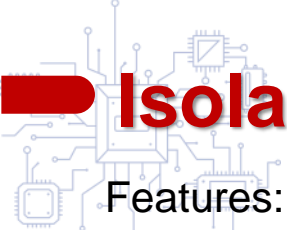


4CH



6CH





Isolated Interface I2C、RS-485、CAN

HOPERF

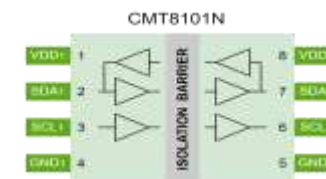
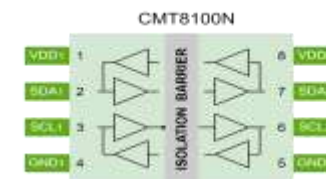
Features:

- Isolation voltage: > 3750VRMS/5000VRMS
- I2C clock rate: up to 2M
- RS-485 Speed: 12Mbps
- CAN speed :5M (CAN FD)
- Super anti-interference capability CMTI: typ. 200kV/us
- Enhanced ESD protection HBM: $\pm 8\text{kV}$
- Life span: >40 years
- Low propagation delay: <15ns
- Voltage range: 2.5V to 5.5V
- Wide temperature range: $-40^{\circ}\text{C}\sim 125^{\circ}\text{C}$
- RoHS compliant
- Standard package: SOP8/SOW16

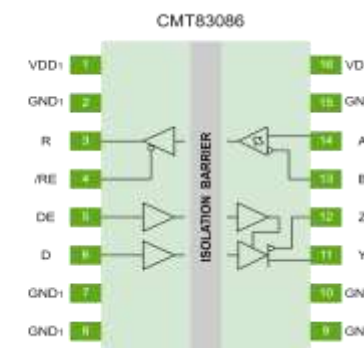
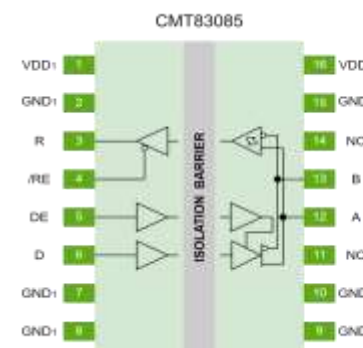
Safety certification:

- UL1577 qualified 3.75kVrms/5kVrms for 1 min.
- CQC qualified: Conform to GB4943.1 -2011
- CSA qualified: Components conform to 5A
- VDE qualified: DIN V VDE V 0884-11:2017-01

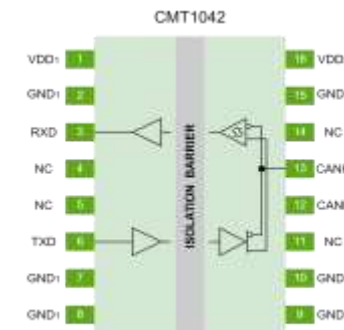
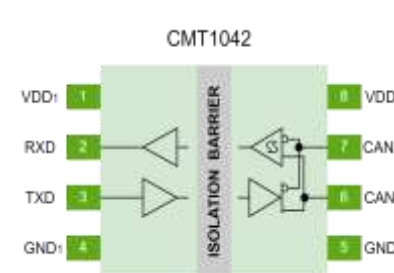
I²C Isolator

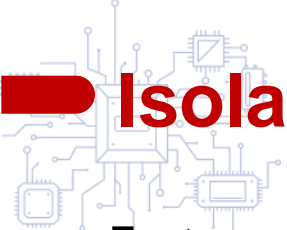


Isolated RS-485 Transceiver



Isolated CAN Transceiver





Isolated Driver

HOPERF

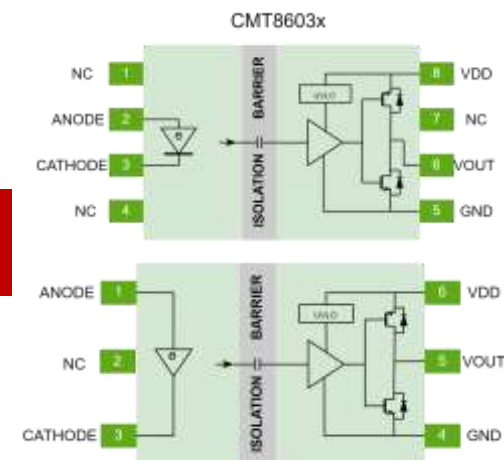
Features:

- Isolation voltage: 5000VRMS
- Super anti-interference capability CMTI: typ. 200kV/us
- Drive pulse frequency: up to 2MHZ
- Drive current: Source:4A peak, Sink:6A peak
- Enhanced ESD protection HBM: $\pm 8\text{kV}$
- Life span: >40 years
- Primary side voltage range: 2.7-5.5V
- Secondary side voltage range: up to 36V
- Wide temperature range: $-40^{\circ}\text{C}\sim 125^{\circ}\text{C}$
- Packaging: SOW8/ SOW16 / SOP8 / SOW6

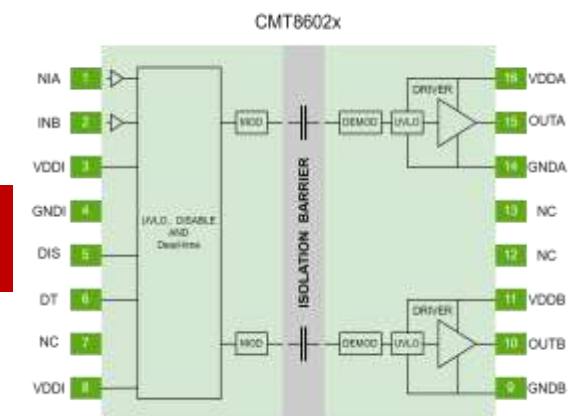
Safety certification:

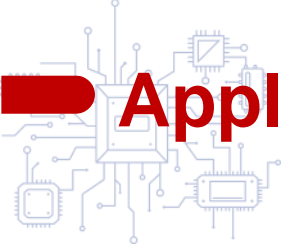
- UL1577 qualified 5kVrms for 1 min.
- CQC qualified: Conform to GB4943.1 -2011
- CSA qualified: Components conform to 5A
- VDE qualified: DIN V VDE V 0884-11:2017-01

Compatible With Optocoupler



Half Bridge Isolated Drive





Applications

HOPERF

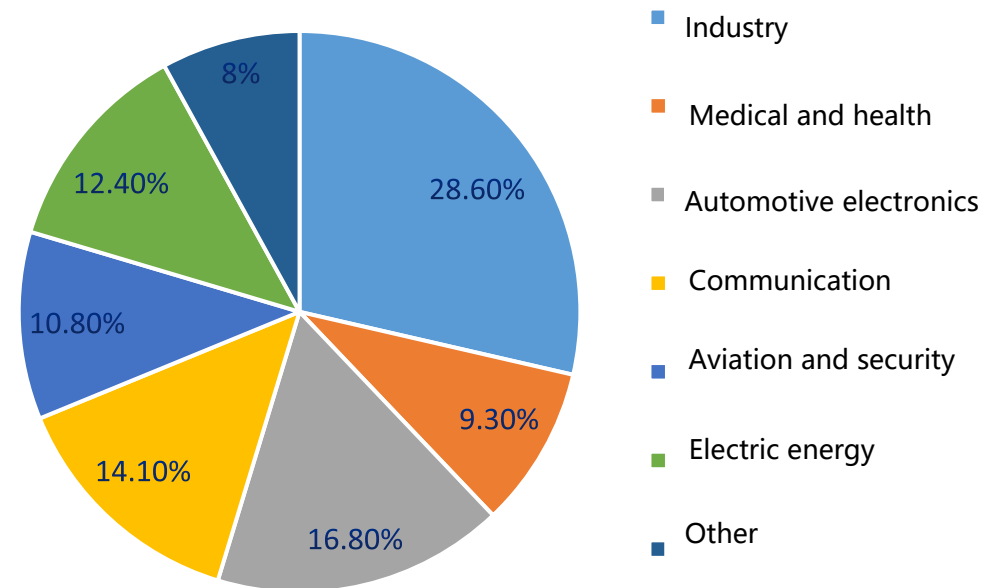
Intelligent Green Power System:

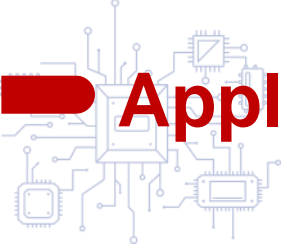
- New energy sources: photovoltaic inverter, energy storage, charging pile, etc
- Power: smart meter
- Home appliance industry: variable frequency air conditioners, refrigerators, etc

Industrial Control:

- Industrial automation control: motor control, central control cabinet, etc
- Communication industry: high-power communication power supply

Digital Isolation Products Market

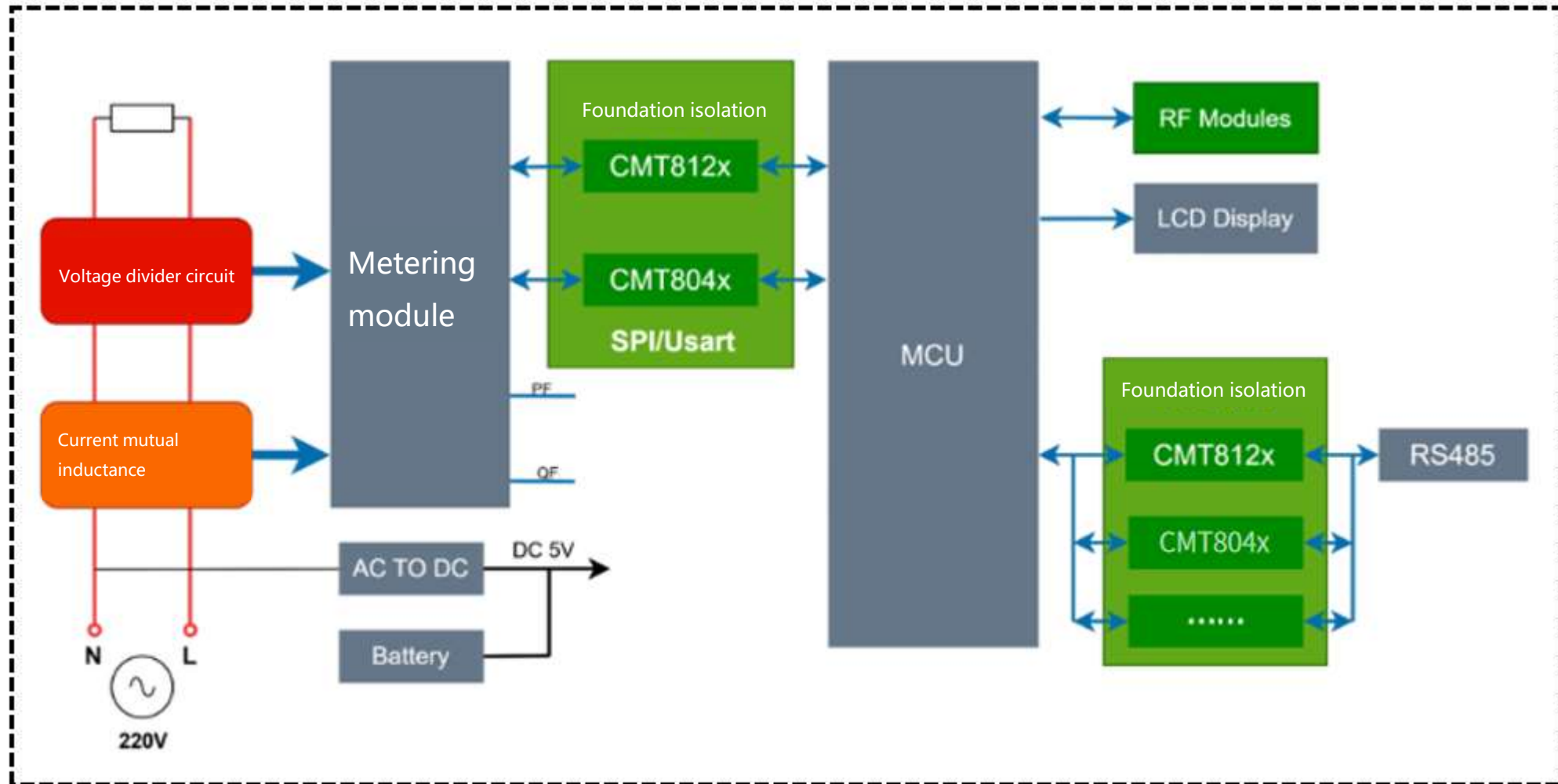


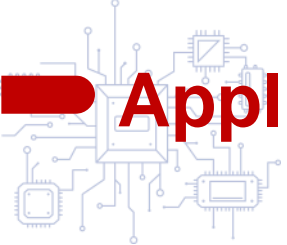


Application Example

HOPERF

Smart Meter

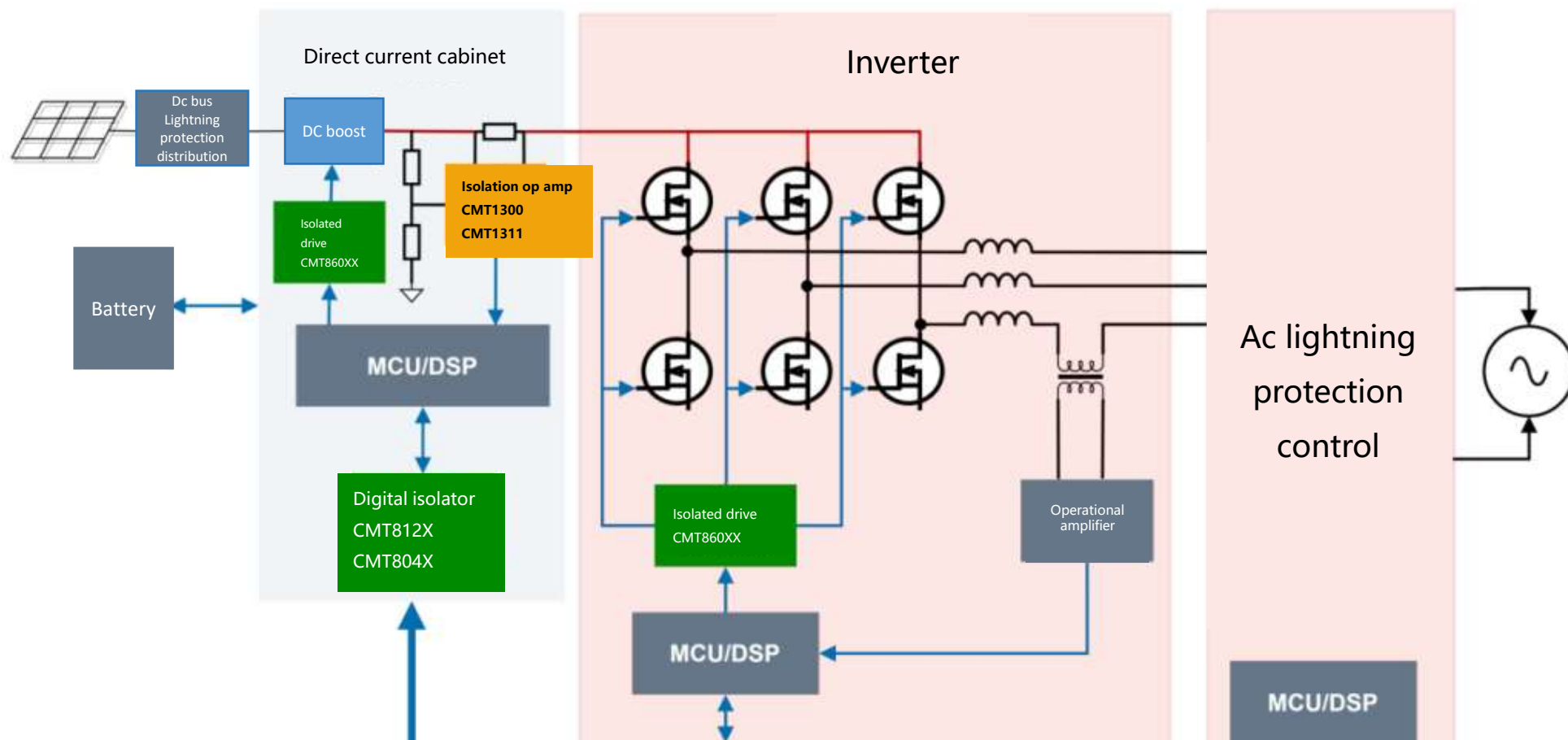


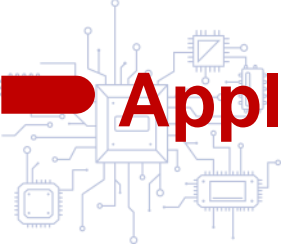


Application Example

HOPERF

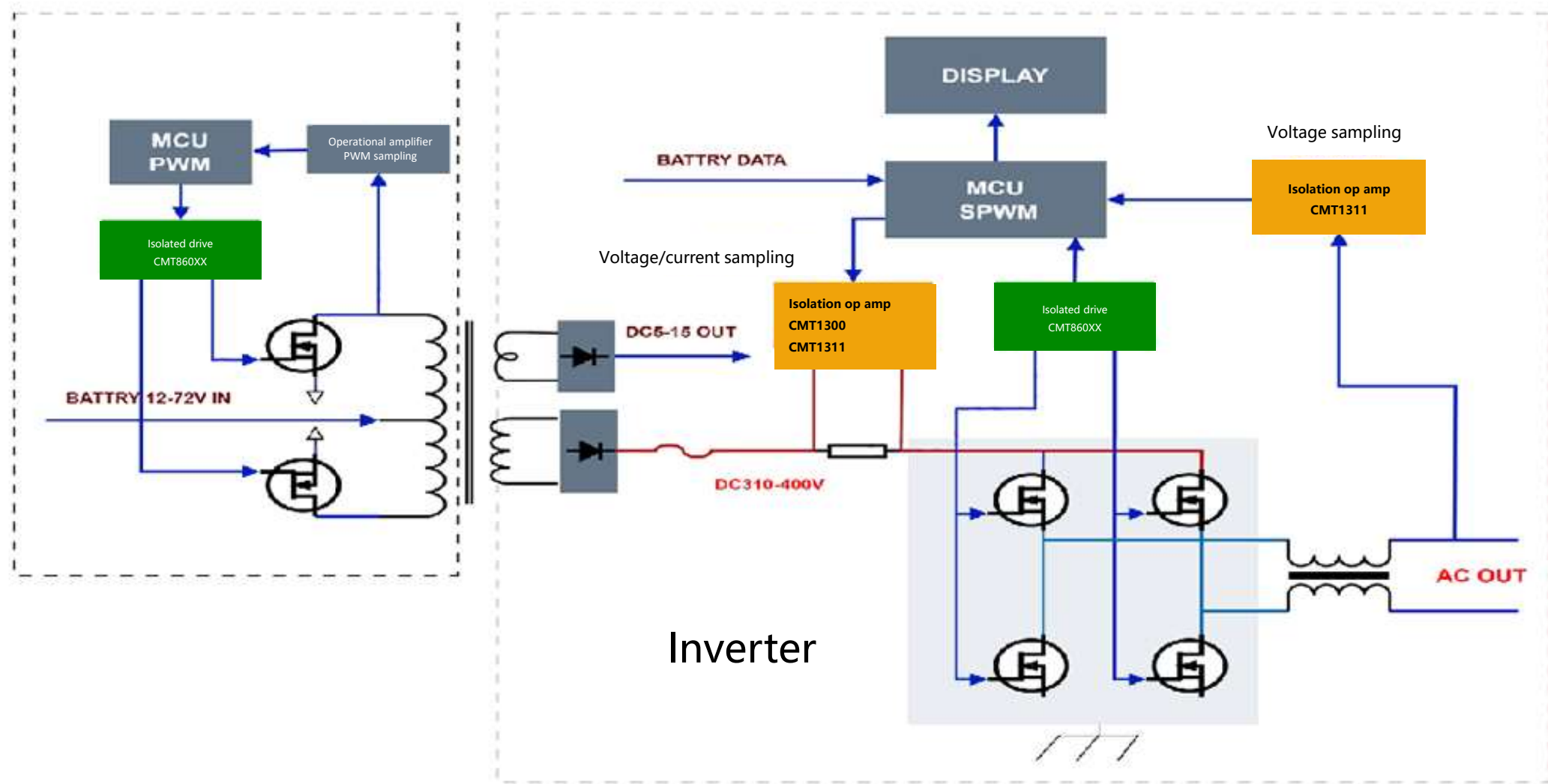
Micro-inverter

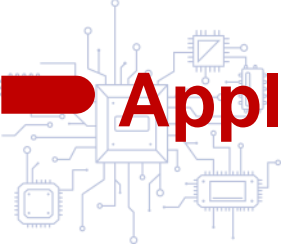




Application Example

Energy Storage Inverter

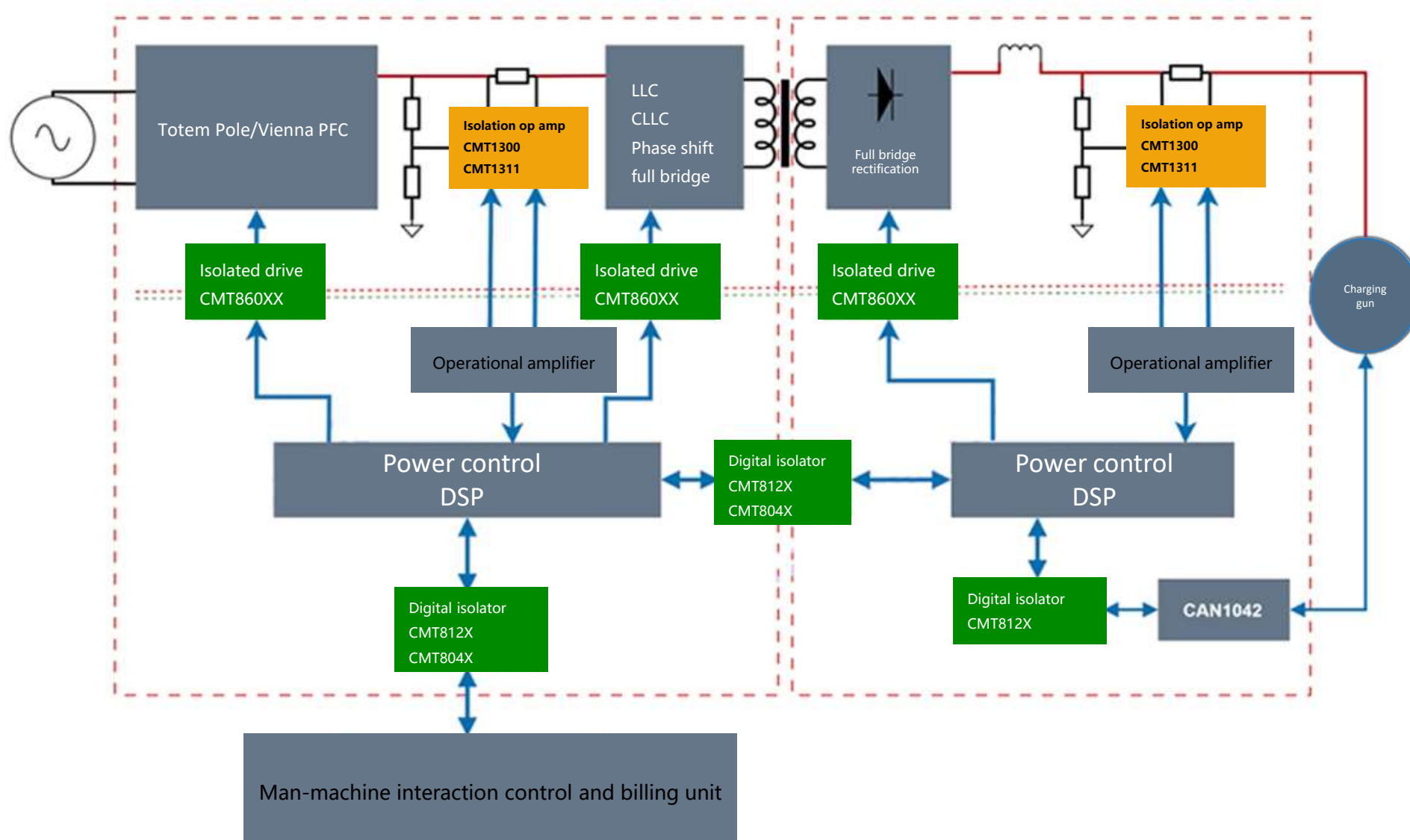


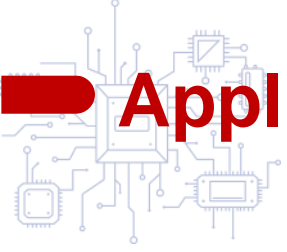


Application Example

HOPERF

EV Charger

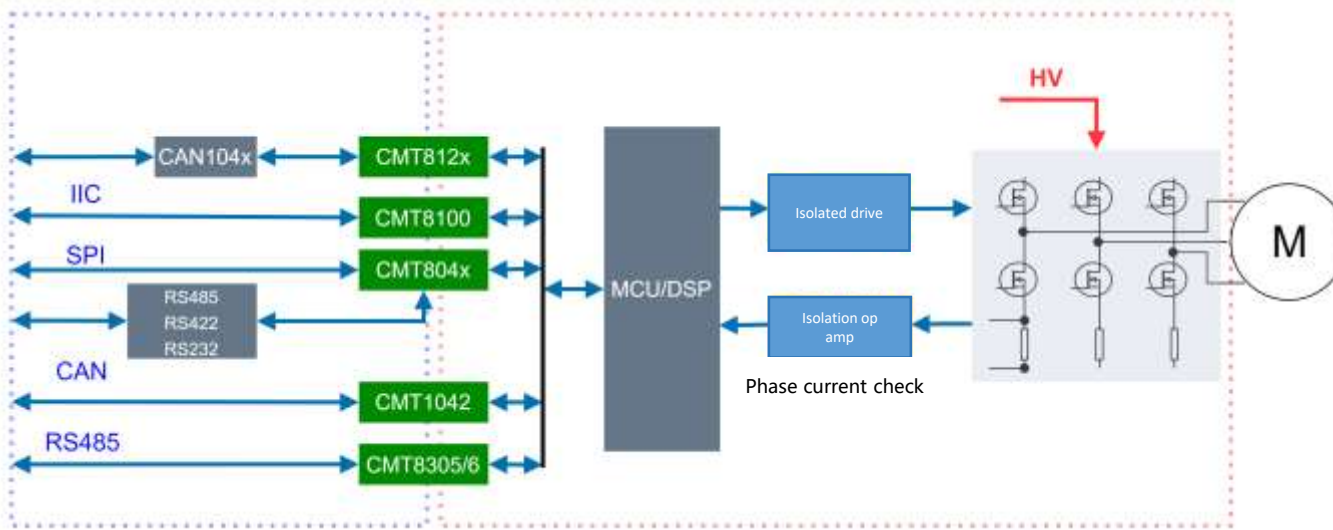




Application Example

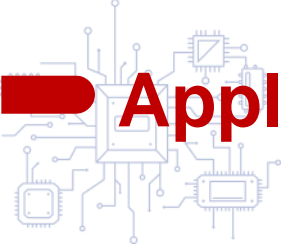
HOPERF

Industrial Motor Control



- Industrial motor control
- Elevator control panel
- Industrial control board

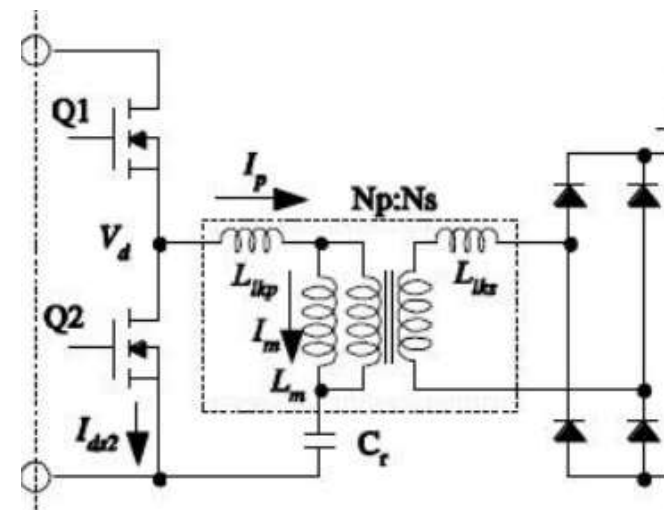
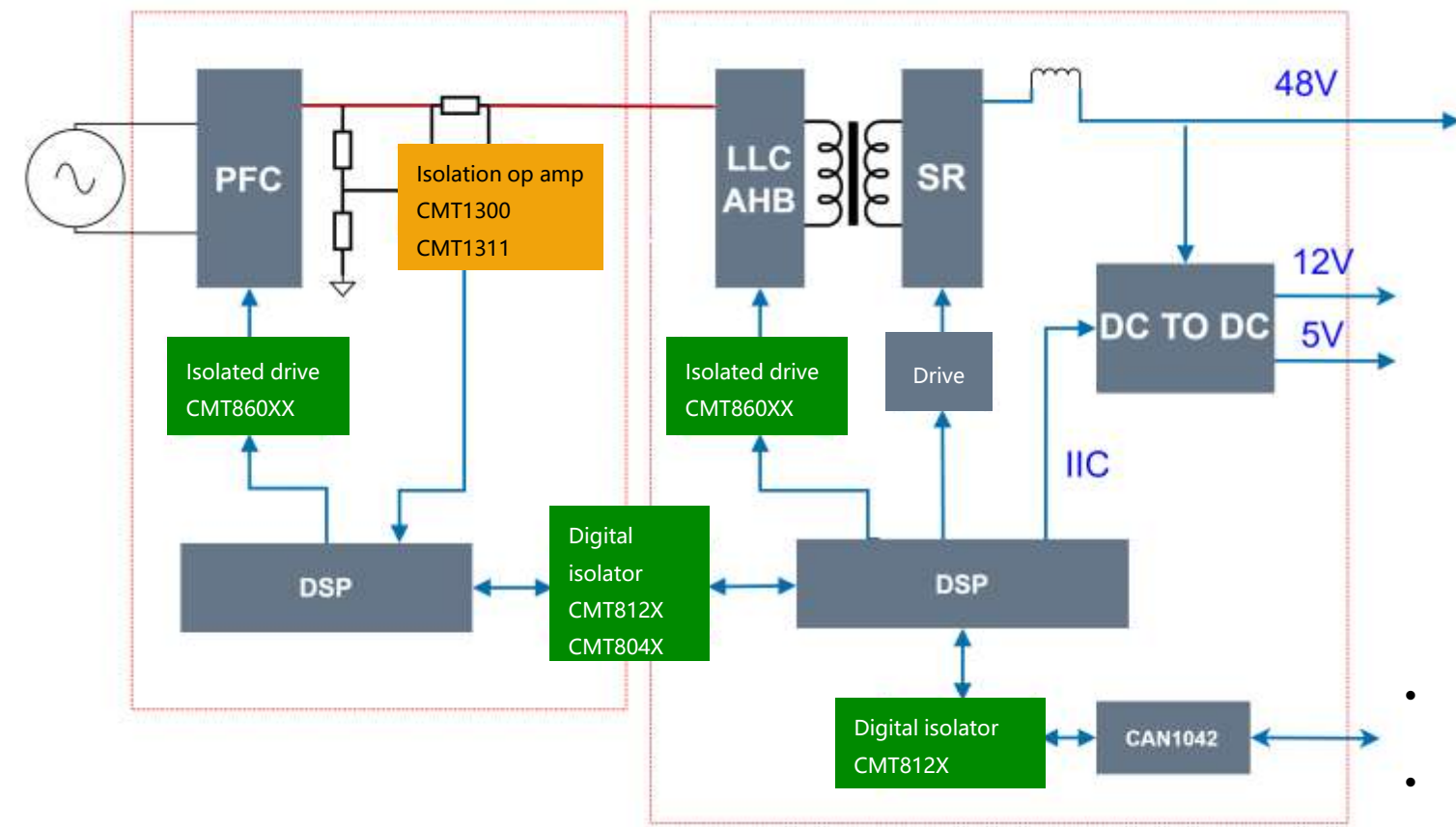




Application Example

HOPERF


High power digital power supply




- Communication power supply
- Industrial power supply



THANKS

 TEL: 0755-82973805, 82973807

 sales@hoperf.com (Sales Contact) Info@hoperf.com (Business Contact)

 30F, 8A Building, Phase III of Vanke CloudCity, Xili Street, Nanshan District,
Shenzhen, Guangdong

 www.hoperf.cn | www.hoperf.com



HOPERF
official website



Public account

