



FUEL THE DIGITAL WORLD

Everything Connected, Everything Intelligent

[Crystal] [Oscillator] [Active EMI IC] [Wireless Charging]

COMPANY

Established in 2012, to
Fuel The Digital World

- La Habra, California

A team with a vast
experienced in the
electronics industry to
provide the most advanced
solutions

- Business Management
- Technical Marketing
- Logistics Management

Joint-ventures in Asia, to
develop, manufacture and
bring to market

QA Certified

- ISO 9001
- ISO 14001
- IATF 16969:2016

Partnered with
Representatives and
Distributors to service
worldwide customers

- America
- EMEA
- ASIA

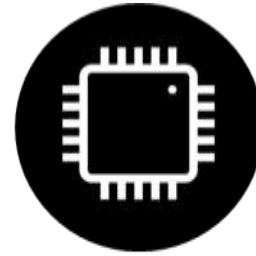
PRODUCTS



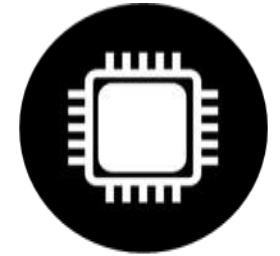
Crystal



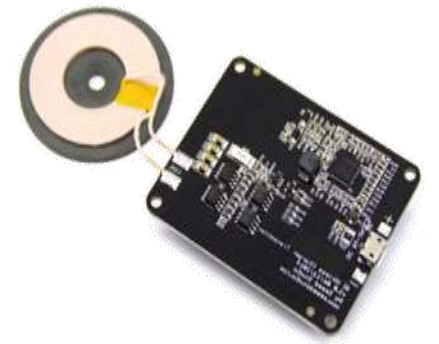
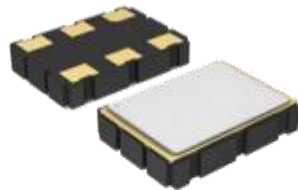
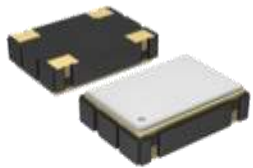
Oscillator



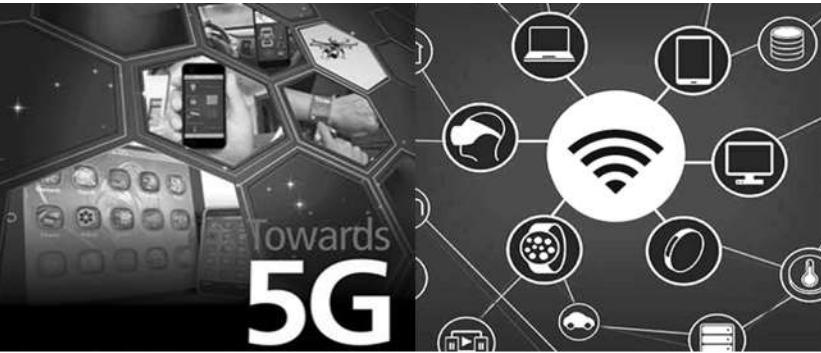
Active EMI IC



Wireless Charging



SOLUTIONS



Cellular Modem

Miniature, High Stability,
High Drive Level

kHz Crystal

MHz Crystal

Temp. Sensing Crystal

GPS TCXO

IoT Connectivity

Miniature, High Stability,
High Drive Level

kHz Crystal

MHz Crystal

Temp. Sensing Crystal

GPS TCXO



Telecommunication

Ultra Stability, Precise,
Low Jitter

CMOS/LVPECL/LVDS XO

VCXO

Stratum 3 TCXO

OCXO



Networking

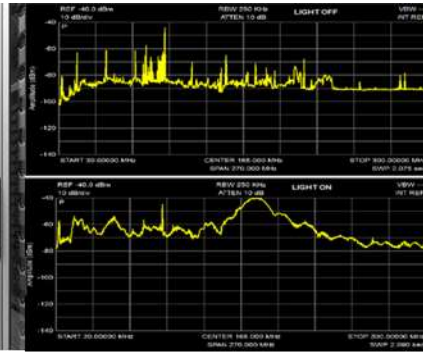
High Freq., Stability,
Low Jitter

MHz Crystal

CMOS/LVPECL/LVDS XO

VCXO

Stratum 3 TCXO



EMI Reduction

High Sensitivity,
Low Power

Active EMI IC

EMI XO Module



Wireless Charging

High Efficiency,
WPC, PMA Compatible

Transmitter Module

Receiver Module

Accessories

DISTRIBUTORS

AMERICA



EMEA



ASIA



CRYSTAL

kHz

32.768kHz
 $\pm 10\text{ppm}$ @ 25°C
-40 to 85°C

DIP Cylinder
SMD Cylinder

SMD Plastic Molded

SMD 3.2x1.5mm
SMD 2.0x1.2mm
SMD 1.6x1.0mm
SMD 1.2x1.0mm

MHz

24MHz to 54MHz
 $\pm 10\text{ppm}$ @ 25°C
 $\pm 15\text{ppm}$ @ -40 to 85°C

DIP HC-49S
SMD HC-49S

SMD 5.0x3.2mm
SMD 3.2x2.5mm
SMD 2.5x2.0mm
SMD 2.0x1.6mm
SMD 1.6x1.2mm
SMD 1.2x1.0mm

**Temp.
Sensing**

12MHz to 54MHz
 $\pm 10\text{ppm}$ @ 25°C
 $\pm 15\text{ppm}$ @ -40 to 85°C

SMD 2.5x2.0mm
SMD 2.0x1.6mm
SMD 1.6x1.2mm

OSCILLATOR

**kHz
CMOS**

32.768kHz
1.8V to 3.3V
±25ppm (-40 to 85°C)

SMD 7.0x5.0mm
SMD 5.0x3.2mm
SMD 3.2x2.5mm
SMD 2.5x2.0mm

**MHz
CMOS**

4MHz to 100MHz
1.8V to 3.3V
±25ppm (-40 to 85°C)

SMD 7.0x5.0mm
SMD 5.0x3.2mm
SMD 3.2x2.5mm
SMD 2.5x2.0mm
SMD 2.0x1.6mm

Active Low EMI

SMD 2.5x2.0mm
SMD 2.0x1.6mm

HCSL

100MHz, 133MHz
2.5V to 3.3V
±25ppm (-40 to 85°C)

SMD 7.0x5.0mm
SMD 5.0x3.2mm
SMD 3.2x2.5mm

LVPECL

25MHz to 200MHz
2.5V to 3.3V
±25ppm (-40 to 85°C)

SMD 7.0x5.0mm
SMD 5.0x3.2mm
SMD 3.2x2.5mm

LVDS

25MHz to 200MHz
2.5V to 3.3V
±25ppm (-40 to 85°C)

SMD 7.0x5.0mm
SMD 5.0x3.2mm
SMD 3.2x2.5mm

OSCILLATOR

VCXO

50MHz to 200MHz
 $\pm 25\text{ppm}$ (-40 to 85°C)

SMD 7.0x5.0mm
SMD 5.0x3.2mm
SMD 3.2x2.5mm

TCXO

13MHz to 52MHz
 $\pm 0.5\text{ppm}$ (-30 to 85°C)

SMD 3.2x2.5mm
SMD 2.5x2.0mm
SMD 2.0x1.6mm
SMD 1.6x1.2mm

10MHz to 52MHz
 $\pm 0.14\text{ppm}$ (-40 to 85°C)
Stratum-3

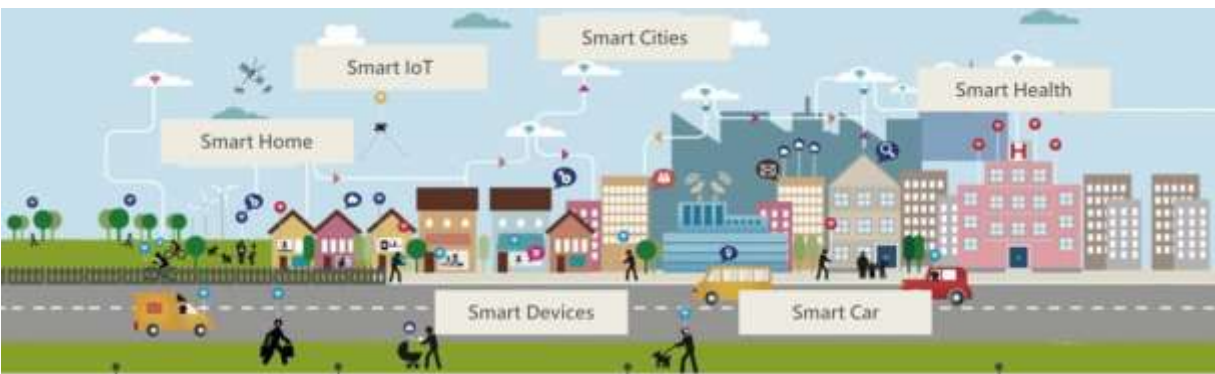
SMD 7.0x5.0mm
SMD 5.0x3.2mm

OCXO

10MHz, 20MHz, 30.72MHz
 $\pm 10\text{ppb}$ (-40 to 85°C)

SMD 9.7x7.3mm

CRYSTAL & OSCILLATOR APPLICATIONS



MHz Crystal
Miniature & Low Profile
1.2x1.0x0.30 (mm)

TSX (TH+Xtal)
Miniature & Low Profile
1.6x1.2x0.55 (mm)

OSC (Differential/CMOS/HCSL)
Low Phase Noise $\leq -100\text{dBc/Hz}$ @ 10Hz;
Miniature 2.5x2.0x0.75 (mm)

TCXO/VTCXO
High Stability $\pm 0.5\text{ppm}$
Miniature & Low Profile 1.6x1.2x0.55 (mm)



- 1 Ultra Stability OCXO (9.7x7.5mm, 14x0.9mm); +/-10ppb
- 2 Ultra Stability S3 TCXO (7.0x5.0mm, 5.0x3.2mm); +/-100ppb

- 3 High Frequency, XO/VCXO (7.0x5.0mm); Up to 2.1GHz, ultra low jitter 0.15pS
- 4 Ultra Low Phase Noise VCXO (3.2x2.5mm); Close-in phase noise -80dBc/Hz
- 5 High Frequency Crystal (MESA 3.2x2.5mm); 200MHz

ACTIVE EMI IC APPLICATIONS



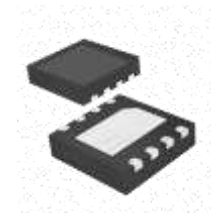
● Active EMI OSC Module

2.5x2.0mm
2.0x1.6mm



● Active EMI IC

2.0x2.0mm
1.0x1.0mm



WIRELESS CHARGING MODULE



Dual Mode
5W Wireless Charging
Receiver Module



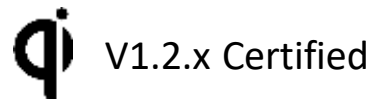
Single Mode
15W Wireless Charging
Receiver Module



Single Round Coils
10W Wireless Charging
Transmitter Module



3 Coils
5W Wireless Charging
Transmitter Module



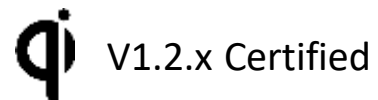
WIRELESS CHARGING PAD



DIY
5W, 10W, 15W
Transmitter Pad




Industrial
5W, 10W, 15W
Transmitter Pad



WIRELESS CHARGING APPLICATION



 V1.2.x Certified

WIRELESS CHARGING ACCESSORY



15W Wireless Charging Pad
Built-in Cooling




10W Multi Wireless Charging
Dual Pad



15W
Wireless Charging Stand



7.5W/10W
Wireless Charging Car Mount

 V1.2.x Certified

BENEFITS FROM Qi CERTIFICATION

- 10+ years WPC full member
- Accelerate product development
- High quality control
- High efficiency
- High performance
- Minimize risk
- Industry standard
- Cost saving for registration, membership, and testing fees
 - 5W BPP TX modules > \$5,000+ ea
 - 15W EPP TX modules > \$20,000+ ea
 - All customized RX modules are subject to registration and testing fees

- Include Qi safety tests in IEC standards and national standards
- Include Qi safety tests in the requirements for safety labels (CCC, CE, UL, etc.)
- Certified by WPC Qi Standards V1.2.4



THINGS YOU NEED TO KNOW

Wireless Charger is a form of Power Supply and can be dangerous

- Fire Hazard from poor quality Wireless Charger
- Metal objects may heat up and cause Plastic Melting and Skin Burn
- High Voltage can be induced and damage the devices

Uncertified Qi wireless charging products

