

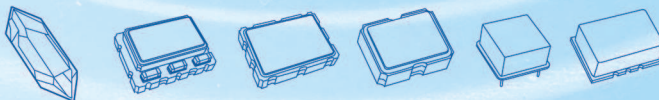


TAITIEN

**QUARTZ CRYSTAL
CRYSTAL OSCILLATOR
VCXO
VCTCXO / TCXO
OCXO
TIMING MODULE**



**TAIWAN
EXCELLENCE
2006**



Our Performance, Your Reputation

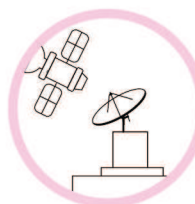
Our Products

OCXO
0.06-200ppb

TCXO
0.1-2ppm

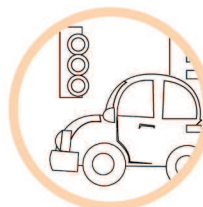
**Crystal Oscillators/
VCXO**
25-100ppm

Crystal Units
10-100ppm



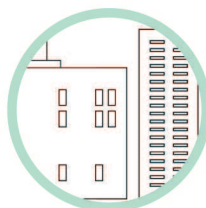
GNSS : TCXO, OCXO, Timing Module

- GPS / Beidou (BDS) / Galileo / GLONASS
- QZSS / IRNSS
- LEO/MEO/GEO
- Positioning and Tracking



Automotive : X'TAL, XO, TCXO

- Mobile data center
- GNSS
- Infotainment
- EV charger
- ADAS
- Connected Car



Data Center : X'TAL, XO, TCXO

- Server
- Switch
- Storage
- PON



Consumer : X'TAL, XO

- Audio, Player, Speaker, Microphone, Web Camera, CCD
- Video, Display & TV(FPD/FTF LCD)
- Notebook
- DESKTOP
- All in One
- IPC
- Printer



Telecom :

X'TAL, XO, TCXO,
OCXO, Timing Module

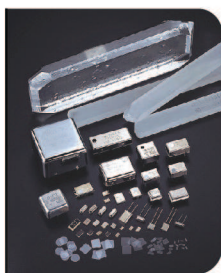
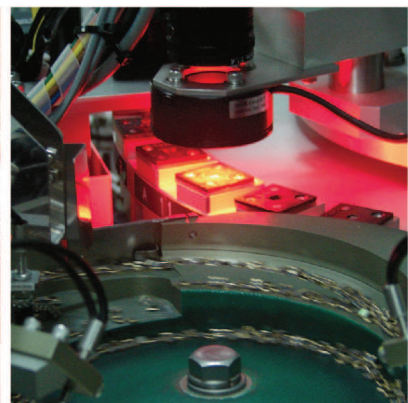
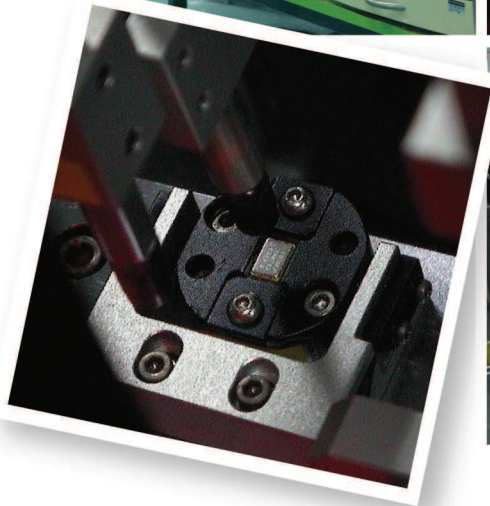
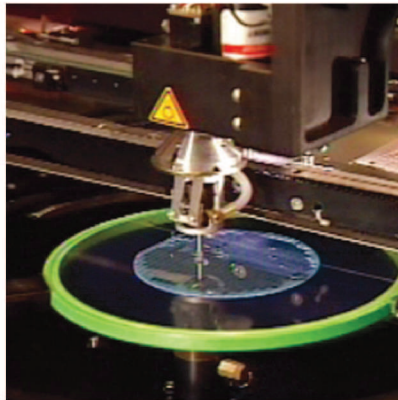
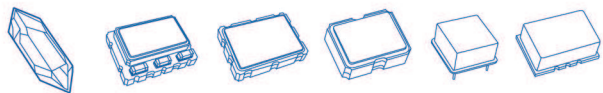
- CPE, Small cell
- RU / DU / CU
- Fronthaul machine
- Backhaul machine



Networking :

X'TAL, XO, TCXO

- Gateway
- AP / Router
- HUB
- AIoT



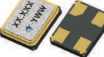
Maintain sustainable competitive advantage from the satisfaction of customers, shareholders and employees

Taitien Electronics, a Quartz Frequency Control Product (FCP) solution provider, started its first production run of Tuning Fork Crystal in 1976. Our main products include XTAL, OSC, VCXO, TCXO, and is the first manufacturer in Taiwan that provides the technique of OCXO and inverted mesa (Qmesa) quartz resonator. Taitien service is capable of addressing one-stop procurement for all FCP requirements.

Our missions are

- 1 Provide our customer with quality Frequency Control Products at competitive price.
- 2 Create knowledge from the integration of information technology and educational training.
- 3 Maintain our quality through continuous improvement; challenge the goal of zero defects.
- 4 Focus product innovation on our core technology.
- 5 To be a world-class Frequency Control Products manufacturer, building network of strategic alliances with quality resources to maintain our market competitiveness.

Crystal Units

TYPE	PACKAGE	FREQ. RANGE	FEATURE
 X3 	1.65 x 1.25 x 0.3mm Ceramic SMD Package	24MHz~54MHz	- Tight Tolerance - Ultra Low Profile
 XZ 	2.05 x 1.65 x 0.45mm Ceramic SMD Package	16MHz~60MHz	Tight Tolerance
 XY 	2.5 x 2.0 x 0.45mm Ceramic SMD Package	12MHz~54MHz	Tight Tolerance
  XX 	3.2 x 2.5 x 0.7mm Ceramic SMD Package	8MHz~60MHz	Tight Tolerance
 XV 	5.0 x 3.2 x 0.8mm Ceramic SMD Package	8MHz~80MHz	Tight Tolerance
XR 	6.0 x 3.5 x 1.0mm Ceramic SMD Package	8MHz~50MHz	Tight Tolerance
 XI 	10.8 x 4.5 x 3.4mm Metal Can Through Hole Package	3.58MHz~80MHz	- Standard Footprint - Low Profile For Close PCB Stacking
XJ 	12.5 x 4.5 x 4.0mm Metal Can SMD Package	3.58MHz~80MHz	Metal Can SMD Package

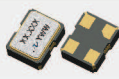
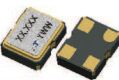
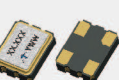
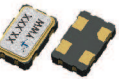
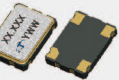
Tuning Fork Crystal Units

TYPE	PACKAGE	FREQ. RANGE	FEATURE
XB 	1.0 x 4.6mm 2.0 x 6.0mm Through Hole Package	32.768kHz	Watch Crystal
XA 	3.0 x 8.0mm Through Hole Package	32.768kHz	Watch Crystal
  XD 	1.6 x 1.0 x 0.5mm 2.0 x 1.2 x 0.6mm 3.2 x 1.5 x 0.9mm Ceramic SMD Package	32.768kHz	Low Profile SMD Watch Crystal

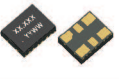
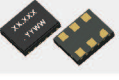
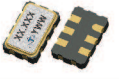
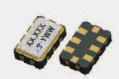
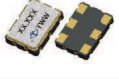
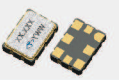
FASTXO Crystal Oscillators (CMOS Output)

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
  PZ-U 	2.05 x 1.65 x 0.75mm Ceramic SMD Package	1 MHz~200MHz	CMOS	- Fast Delivery - Smaller Size - Any Frequency - Operating Temp. up to 105°C
  PY-U 	2.5 x 2.0 x 0.81mm Ceramic SMD Package	1 MHz~200MHz	CMOS	- Fast Delivery - Custom Freq. from 1 to 200MHz - Low Standby Current - Any Frequency - Operating Temp. up to 105°C
  PX-U 	3.2 x 2.5 x 0.95mm Ceramic SMD Package	1 MHz~200MHz	CMOS	- Fast Delivery - Custom Freq. from 1 to 200MHz - Low Standby Current - Any Frequency - Operating Temp. up to 105°C
 PV-U 	5.0 x 3.2 x 1.2mm Ceramic SMD Package	1 MHz~200MHz	CMOS	- Fast Delivery - Custom Freq. from 1 to 200MHz - Low Standby Current - Any Frequency - Operating Temp. up to 105°C
 PC-U 	7.0 x 5.0 x 1.3mm Ceramic SMD Package	1 MHz~200MHz	CMOS	- Fast Delivery - Any Frequency - Operating Temp. up to 105°C

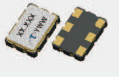
Crystal Oscillators (CMOS Output)

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
 OZ 	2.05 x 1.65 x 0.75mm Ceramic SMD Package	32.768kHz~50MHz	CMOS	• Ultra-Compact and light • Low Jitter • Low Standby Current
 OY 	2.5 x 2.0 x 0.81mm Ceramic SMD Package	32.768kHz~125MHz	CMOS	• Low Jitter • Low Standby Current • Operating Temp. Up to 125°C • Enhanced Stability Support
 OX 	3.2 x 2.5 x 0.95mm Ceramic SMD Package	32.768kHz~125MHz	CMOS	• Low Jitter • Low Standby Current • Operating Temp. Up to 125°C • Enhanced Stability Support
OV 	5.0 x 3.2 x 1.2mm Ceramic SMD Package	13.7kHz~160MHz	CMOS	• Low Jitter • Low Standby Current
OC 	7.0 x 5.0 x 1.3mm Ceramic SMD Package	13.7kHz~166MHz	CMOS	• Low Jitter • Low Standby Current

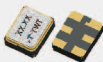
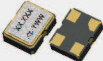
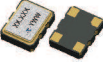
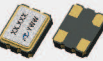
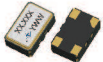
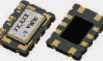
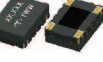
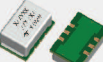
FASTXO Crystal Oscillators (LVPECL/LVDS/HCSL/CML Output)

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
 OA-M 	3.2 x 2.5 x 0.9mm Ceramic SMD Package	10MHz~1.5GHz	LVPECL / LVDS	• Fast Delivery • Low Jitter • Differential Logic
 IA 	3.2 x 2.5 x 0.9mm Silicon Package	25MHz~350MHz	LVPECL / LVDS HCSL	• Fast Delivery • Differential Logic • Up to 350MHz
 IW 	4.0 x 3.2 x 0.9mm Silicon Package	25MHz~350MHz	LVPECL / LVDS HCSL	• Fast Delivery • Differential Logic • Up to 350MHz
 OW-M 	5.0 x 3.2 x 1.25mm Ceramic SMD Package	10MHz~1.5GHz	LVPECL / LVDS	• Fast Delivery • Differential Logic • Up to 1.5GHz
 OJ-M 	5.0 x 3.2 x 1.4mm Ceramic SMD Package	15MHz~2.1GHz 15MHz~700MHz	LVPECL / LVDS / CML HCSL	• Fast Delivery • Ultra Low Jitter • Differential Logic
 OT-M 	7.0 x 5.0 x 1.45mm Ceramic SMD Package	10MHz~1.5GHz	LVPECL / LVDS	• Low Jitter • Differential Logic • Up to 1.5GHz
 OD-M 	7.0 x 5.0 x 1.7mm Ceramic SMD Package	15MHz~2.1GHz 15MHz~700MHz	LVPECL / LVDS / CML HCSL	• Fast Delivery • Ultra Low Jitter • Differential Logic

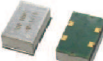
Crystal Oscillators (LVPECL/LVDS/HCSL/CML Output)

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
 OA-U 	3.2 x 2.5 x 0.9mm Ceramic SMD Package	100MHz~170MHz 100MHz~175MHz 100MHz~135MHz	LVPECL LVDS HCSL	• Ultra Low Jitter Type: 50fs
 OW-U 	5 x 3.2 x 1.25mm Ceramic SMD Package	100MHz~170MHz 100MHz~175MHz 100MHz~135MHz	LVPECL LVDS HCSL	• Ultra Low Jitter Type: 50fs
 OT-U 	7 x 5 x 1.45mm Ceramic SMD Package	100MHz~170MHz 100MHz~175MHz 100MHz~135MHz	LVPECL LVDS HCSL	• Ultra Low Jitter Type: 100fs
 OB 	2.5 x 2 x 0.92mm Ceramic SMD Package	13.5MHz~220MHz	LVPECL / LVDS HCSL	• Low Jitter Type: 0.15ps
OA 	3.2 x 2.5 x 0.9mm Ceramic SMD Package	10MHz~250MHz 25MHz~175MHz	LVPECL / LVDS HCSL	• Low Jitter • Differential Logic • Up to 250MHz
OW 	5.0 x 3.2 x 1.25mm Ceramic SMD Package	10MHz~320MHz 25MHz~175MHz	LVPECL / LVDS HCSL	• Low Jitter • Differential Logic • Up to 320MHz
 OT 	7.0 x 5.0 x 1.45mm Ceramic SMD Package	10MHz~320MHz 25MHz~175MHz	LVPECL / LVDS HCSL	• Low Jitter • Differential Logic • Up to 320MHz

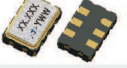
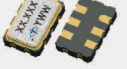
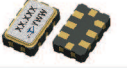
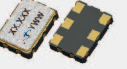
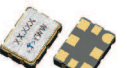
Voltage Controlled Temperature Compensated Crystal Oscillators

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
 TZ 	2.0 x 1.6 x 0.7mm Ceramic SMD Package	10MHz~52MHz	Clipped Sine Wave	±0.5ppm@-40~+85°C - Miniature SMD Type - Low Power Consumption - VCTCXO Available
  TY 	2.5 x 2.0 x 0.7mm Ceramic SMD Package	10MHz~52MHz	Clipped Sine Wave	±0.5ppm@-40~+85°C - Low Power Consumption - VCTCXO Available
 TY-J 	2.5 x 2.0 x 0.85mm Ceramic SMD Package	9.5MHz~60MHz	CMOS	Low Power Consumption
  TX 	3.2 x 2.5 x 0.9mm Ceramic SMD Package	10MHz~52MHz	Clipped Sine Wave	±0.5ppm@-40~+85°C - Low Power Consumption - VCTCXO Available
 TX-J 	3.2 x 2.5 x 0.95mm Ceramic SMD Package	9.5MHz~60MHz	CMOS	Low Power Consumption
  TX-P 	3.2 x 2.5 x 1.6mm Ceramic SMD Package	10MHz~1.5GHz	CMOS / LVPECL / LVDS	- High Frequency - Fast Delivery ±1.0ppm @-40~+85°C - Differential Logic
 TL High Precision Stratum3 	5.0 x 3.2 x 1.85mm Ceramic SMD Package	5MHz~52MHz	CMOS / Clipped Sine Wave	High Precision for ±0.1ppm @-40~+85°C ±0.2ppm @-40~+105°C
 TW High Precision Stratum3 	5.0 x 3.2 x 1.85mm Ceramic SMD Package	10MHz~52MHz	CMOS / Clipped Sine Wave	High Precision for ±0.1ppm @-40~+85°C ±0.2ppm @-40~+105°C
 TS High Precision Stratum3 	7.0 x 5.0 x 1.9mm Ceramic SMD Package	5MHz~52MHz	CMOS / Clipped Sine Wave	High Precision for ±0.1ppm @-40~+85°C ±0.2ppm @-40~+105°C
 TT High Precision Stratum3 	7.0 x 5.0 x 1.9mm Ceramic SMD Package	5MHz~52MHz	CMOS / Clipped Sine Wave	High Precision for ±0.1ppm @-40~+85°C ±0.2ppm @-40~+105°C
 TA 	7.0 x 5.0 x 1.9mm Ceramic SMD Package	5MHz~52MHz	CMOS / Clipped Sine Wave	- Low Power Consumption - VCTCXO Available
 TT-L 	7.0 x 5.0 x 2.3mm Metal Cover, FR-4 PCB Based SMD Package	10MHz~52MHz	CMOS / Clipped Sine Wave	- Low G Sensitivity: < 2.5 ppb/g (< 0.3 ppb/g Available) - Phase Jitter: < 0.5ps (at 12KHz to 5MHz Frequency offsets)
TK 	14.3 x 9.6 x 6.5mm Metal Cover, FR-4 PCB Based SMD Package	40MHz~150MHz	CMOS / Clipped Sine Wave	- FR-4 PCB Based - Low Current Option - VCTCXO Available

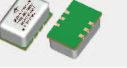
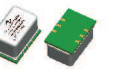
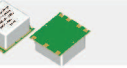
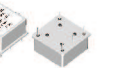
Voltage Controlled Crystal Oscillators (CMOS Output)

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
  VA-M 	3.2 x 2.5 x 0.9mm Ceramic SMD Package	10MHz~250MHz	CMOS	- Fast Delivery - Up to 250MHz - Any Frequency
 VW 	5.0 x 3.2 x 1.25mm Ceramic SMD Package	1.5MHz~170MHz	CMOS	- Tight Symmetry - Low Jitter
  VW-M 	5.0 x 3.2 x 1.25mm Ceramic SMD Package	10MHz~250MHz	CMOS	- Fast Delivery - Up to 250MHz - Any Frequency
 VT-M 	7.0 x 5.0 x 1.45mm Ceramic SMD Package	10MHz~250MHz	CMOS	- Fast Delivery - Up to 250MHz - Any Frequency
VL 	14.0 x 9.0 x 3.6mm Metal Can SMD Package	50MHz~125MHz	CMOS	- Ultra Low Phase Noise - Low Power Consumption

Voltage Controlled Crystal Oscillators (LVPECL/LVDS/HCSL Output)

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
 VA-M 	3.2 x 2.5 x 0.9mm Ceramic SMD Package	10MHz~1.5GHz	LVPECL / LVDS	• Fast Delivery • Wide Pulling Range • Differential Logic • Low Jitter
 VW 	5.0 x 3.2 x 1.25mm Ceramic SMD Package	30MHz~250MHz	LVPECL / LVDS	• Tight Symmetry • Differential Logic • Ultra Low Jitter
 VW-M 	5.0 x 3.2 x 1.25mm Ceramic SMD Package	10MHz~1.5GHz	LVPECL / LVDS	• Fast Delivery • Wide Pulling Range • Differential Logic • Low Jitter
VJ-M 	5.0 x 3.2 x 1.4mm Ceramic SMD Package	15MHz~2.1GHz	CMOS / LVPECL / LVDS / CML / HCSL	• Wide Pulling Range • Up to 2.1GHz • Ultra Low Jitter Type:250fs
 VT-M 	7.0 x 5.0 x 1.45mm Ceramic SMD Package	10MHz~1.5GHz	LVPECL / LVDS	• Tight Symmetry • Wide Pulling Range • Differential Logic • Up to 1.5GHz • Low Jitter
VD-M 	7.0 x 5.0 x 1.7mm Ceramic SMD Package	15MHz~2.1GHz	CMOS / LVPECL / LVDS / CML / HCSL	• Wide Pulling Range • Up to 2.1GHz • Ultra Low Jitter Type:250fs

Oven Controlled Crystal Oscillators

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
 NN 	9.7 x 7.5 x 4.1mm Metal Can SMD Package	10MHz~40MHz	Rectangular / Clipped Sine Wave	• Low Power Consumption • ± 20ppb Stability over -40~+85°C • Stratum 3 (Overall ± 4.6ppm including 20 Years Aging)
 NK-N 	14.5 x 9.6 x 6.5mm Metal Can SMD Package	10MHz~40MHz	CMOS	• Low Power Consumption • Overall ± 4.6ppm including 20 Years Aging • Fast Warm-Up
NK-H 	14.7 x 9.6 x 8.2mm Metal Can SMD Package	10MHz~40MHz	CMOS	• Low Power Consumption • SC-CUT Crystal • High Stability • Low Phase Noise • Fast Warm-Up
 NF 	20.3 x 12.7 x 11.0mm Metal Can Through Hole Package	5MHz~40MHz	CMOS	• AT or SC Cut Crystal • Standard DIP 14 Pin • Excellent Stability • SMD Optional • NF-25MHz-2050 Series (Fast Delivery: 1 Week, Quantity <= 20pcs)
NP 	20.6 x 20.6 x 11.0mm Metal Can Through Hole Package	5MHz~40MHz	CMOS	• SC or AT Cut Crystal • Stratum 3E Compliant • High Stability • Up to -110dBc @ 1Hz
NJ 	25.4 x 22.1 x 11.0mm Metal Can SMD Package	5MHz~100MHz	CMOS / Sine Wave	• SC or AT Cut Crystal • High Stability • Low Phase Noise • Fast Warm-Up
 NA 	25.4 x 25.4 x 12.7mm Metal Can Through Hole Package	5MHz~100MHz	LVTTL / Sine Wave	• SC-CUT Crystal • High Stability • Low Phase Noise • Fast Warm-Up • NA-10MHz-2000/NA-10MHz-2500 Series (Fast Delivery: 1 Week, Quantity <= 20pcs)
 NI 	36.3 x 27.2 x 12.7mm Metal Can Through Hole Package	5MHz~100MHz	LVTTL / Sine Wave	• SC-CUT Crystal • High Stability • Stratum 3E Compliant • Up to -110dBc @ 1Hz • NI-10MHz-2400/NI-10MHz-2500/NI-100MHz-2900 Series (Fast Delivery: 1 Week, Quantity <= 20pcs)
 NI-10M-3500 Double Oven 	36.3 x 27.2 x 12.7mm Metal Can Through Hole Package	10MHz	Rectangular	• -90 dBc/Hz @ 1Hz • ± 0.05 ppb @ -10°C to +70°C
 NF-100M-6800 Low Noise 	20.3 x 12.7 x 11.0mm Metal Can Through Hole Package	100MHz	HCMOS/Sine Wave	• -173 dBc/Hz @ 1kHz • ± 50 ppb @ -20°C to +70°C • 1 ppb/g
 NA-10M-6800 Low Noise 	25.4 x 25.4 x 12.7mm Metal Can Through Hole Package	10MHz	Sine Wave	• -118 dBc/Hz @ 1Hz • ± 5 ppb @ -20°C to +70°C
 NA-100M-6800 Low Noise 	25.4 x 25.4 x 12.7mm Metal Can Through Hole Package	100MHz	Sine Wave	• -163 dBc/Hz @ 1kHz • ± 20 ppb @ -20°C to +70°C
 NA-100M-6900 Low Noise 	25.4 x 25.4 x 12.7mm Metal Can Through Hole Package	100MHz	Sine Wave	• -162 dBc/Hz @ 1kHz • ± 50 ppb @ -20°C to +70°C
 NI-100M-6700 Low g-sensitivity 	36.3 x 27.2 x 12.7mm Metal Can Through Hole Package	100MHz	Sine Wave	• -155 dBc/Hz @ 1kHz • ± 100 ppb @ -40°C to +85°C • 0.1 ppb/g

Timing Module

TYPE	PACKAGE	FREQ. RANGE	OUTPUT	FEATURE
 DT-5151 	50.8 x 50.8 x 24mm Metal Can Through Hole Package	5,10MHz	CMOS	• 24 Hours Holdover <1.5uS, $\pm 10^\circ\text{C}$ temperature change • 1pps input and 1pps output for 1pps synchronization • Discipline to 1ns RMS in phase and <10⁻¹² in frequency
 GT-11 	25.4 x 25.4 x 9.4mm Through Hole Package	10MHz	CMOS	• <10⁻¹² in frequency • 1PPS GPS Disciplined <75 ns

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