

ISSUE 1; November 2021

### Description

- The IQXT-318 uses ASIC technology and is designed to meet the short and medium term stability requirements of packet network synchronisation for Small Cells. The oscillator has low jitter to meet network interface requirements (e.g. 10GE) and low phase noise to meet radio interface requirements of LTE-A (TS 36.104) and WCDMA (TS 25.104) transceivers. The IQXT-318 is the ideal choice for Small Cell synchronisation requirements.
- FEATURES:**  
 Patented 'varactor linearisation' removes the effects of tilt when using voltage control.  
 HCMOS and Clipped Sinewave output options available.  
 LTE phase noise compliant.  
 Temperature sensor option.
- APPLICATIONS:**  
 Small Cells -  
 WCDMA  
 LTE  
 LTE-A
- Standard Frequencies: 19.20MHz, 25.0MHz, 24.5760MHz, 26.0MHz, 30.720MHz, 38.40MHz and 40.0MHz.

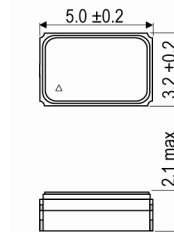
### Frequency Parameters

- Frequency: 19.2MHz to 40.0MHz
- Frequency Tolerance:  $\pm 1.00$ ppm
- Tolerance Condition: @ 25°C  $\pm 1^\circ\text{C}$
- In-service Short-term Frequency Stability (all effects for 24hrs):  $\pm 50$ ppb to  $\pm 250$ ppb
- Ageing:  
 $\pm 20$ ppb max/day  
 $\pm 200$ ppb max/month  
 $\pm 1$ ppm max/year  
 $\pm 3$ ppm max over 10yrs
- Frequency Slope  $\Delta F/\Delta T$  (in still air):  $\pm 20$ ppb/ $^\circ\text{C}$  to  $\pm 100$ ppb/ $^\circ\text{C}$
- Acceleration Sensitivity (gamma vector of all 3 axes from 30 to 1500Hz): Typically 2ppb/G max
- Supply Voltage Variation ( $\pm 2\%$  change @ 25°C ref to frequency @ nominal Vs):  $\pm 10$ ppb typ
- Load Variation:  
 HCMOS ( $\pm 1$ pF change @ 25°C ref to frequency @ nominal load):  $\pm 10$ ppb typ  
 Clipped Sine ( $\pm 2\%$  change @ 25°C ref to frequency @ nominal load):  $\pm 10$ ppb typ
- Reflow Variation (after 1hr recovery @ 25°C):  $\pm 0.5$ ppm max
- Temperature Rate of Change (maximum rate of change of temperature condition for guaranteed stability specifications):  $1^\circ\text{C}/\text{min}$  max

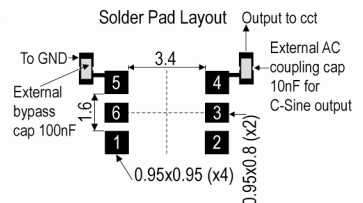
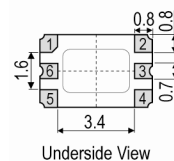
### Electrical Parameters

- Supply Voltage Range: 2.5V to 5.7V  
 (Standard Voltages are 3.0 & 3.3; other values available on request)
- Supply Current:  
 HCMOS: 4mA typ  
 Clipped Sine: 2mA typ

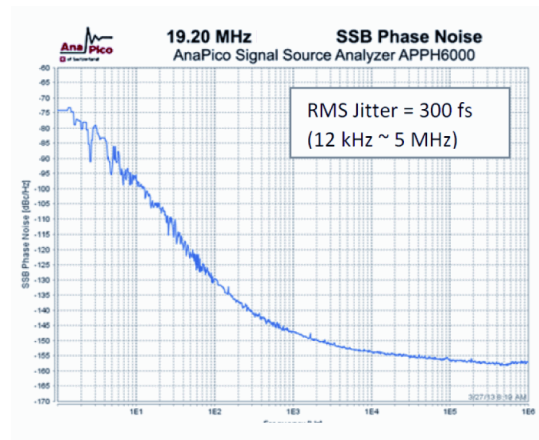
### Outline (mm)



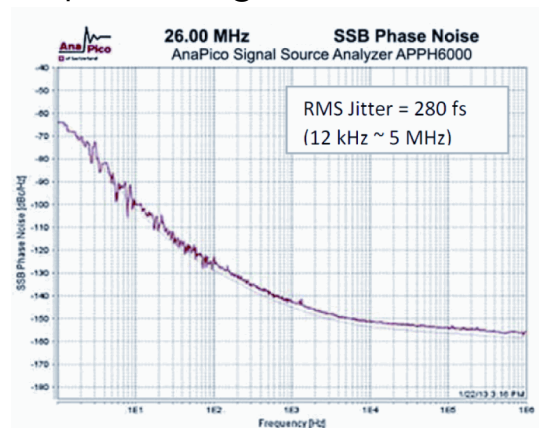
- Pad Connections
- Voltage Control or N/C
  - GND
  - N/C or Vref or Vtemp
  - Output
  - +Vs
  - Enable/Disable



### Example Phase Noise @ 19.20MHz



### Example Phase Noise @ 26.00MHz



### Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1.760.318.2824

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)

Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

#### Frequency Adjustment

- Pulling ±5ppm to ±12ppm
- Control Voltage 1.5V ±1.0V
- Input Impedance 100kΩ min

#### Operating Temperature Ranges

- -40 to 85°C

#### Output Details

- Output Compatibility HCMOS/Clipped Sine
- HCMOS Output Waveform:  
Output Voltage Level Low (VoL): 10%Vs max  
Output Voltage Level High (VoH): 90%Vs min  
Rise and Fall Times: 8ns max  
Duty Cycle (measured @ 50% level): 45/55% max
- Clipped Sine Output Waveform:  
Output Voltage Level (@ TA=25°C, Vs min and load=10kΩ//10pF): 0.8V pk-pk min  
Output Load Capability: 10kΩ//10pF
- Start Up Time (amplitude within 90% of specified output level):  
15ms max

#### Output Control

- Tri-State Mode:  
Logic '0' (20%Vs max) to pad 6 disables the oscillator output, the output goes to a high impedance state.  
Logic '1' (60%Vs min) or no connection to pad 6 enables the oscillator output.

#### Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): 3

#### Packaging Details

- Pack Style: Bulk Bulk pack  
Pack Size: 100
- Pack Style: Reel Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000

#### Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
19.2MHz	40.0MHz	-40 to 85	-	-	-	-

*This document was correct at the time of printing; please contact your local sales office for the latest version.*  
[Click to view latest version on our website.](#)

#### Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1.760.318.2824

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)

Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

**Chipset Approval Table**

<b>IQD Model</b>	<b>Ref No.</b>	<b>Frequency</b>	<b>Chipset Type</b>	<b>IC Supplier</b>	
IQXT-318-1	E6242LF	19.20MHz	FSM9xxx, FSM99xx	Qualcomm	
IQXT-318-2	E6350LF	24.5760MHz	TCI6612, TCI6614, TCI6630	Texas Instruments	
IQXT-318-3	E6359LF	30.720MHz	OCTEON Fusion CNF71xx	Cavium	
IQXT-318-4	E6400LF	25.0MHz	Transcede 2000, Transcede 3000, Transcede 4000	Intel	
IQXT-318-5	E6402LF	19.20MHz	Transcede 2000, Transcede 3000, Transcede 4000	Intel	
IQXT-318-6	E6404LF	40.0MHz	Transcede 2000, Transcede 3000, Transcede 4000	Intel	
IQXT-318-7	E6446LF	38.40MHz	FSM9xxx, FSM99xx	Qualcomm	
IQXT-318-8	E6473LF	19.20MHz	ADI96xx	ADI	
IQXT-318-9	E6474LF	30.720MHz	ADI96xx	ADI	
IQXT-318-10	E6475LF	40.0MHz	ADI96xx	ADI	
IQXT-318-11	E6519LF	30.720MHz	OCTEON Fusion CNF71xx	Cavium	
IQXT-318-12	E6606LF	26.0MHz	BCM61730, BCM61750, BCM61760	Broadcom	
IQXT-318-13	E6612LF	19.20MHz	BCM61730, BCM61750, BCM61760	Broadcom	

**Sales Office Contact Details:**

UK: +44 (0)1460 270200

USA: +1.760.318.2824

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)

Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)