

## Frequency Translator & Jitter Attenuator

The ABFT series is an Ultra Low Jitter VCXO based frequency translator; ideally suited to improve Jitter characteristics of the input signal. This device is designed to provide input clock smoothing - while providing Phase and Frequency Locked higher frequency translated output.

Typical application would take a 10MHz reference frequency and phase and frequency lock it to either a 20MHz or a 40MHz Low Jitter VCXO. The implemented technology significantly attenuates the jitter content of the 10MHz reference signal; while keeping the higher frequency RF Output - Frequency and Phase Coherent with the input 10MHz reference signal.

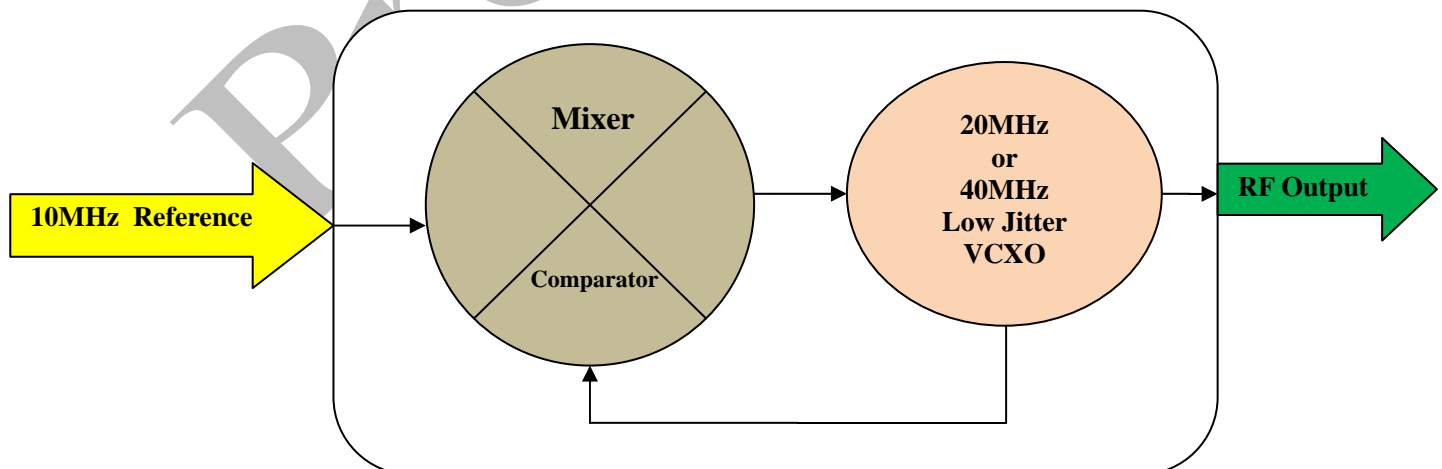
### Features:

- 5\*7\*2 mm SMT, RoHS Compliant reflow-able package
- Frequency translation to either 20MHz or 40MHz carrier
- +3.3V Supply Voltage
- Industrial operating temperature range (-40°C to +85°C)
- LVC MOS Output
- Internal absolute pull range  $\geq \pm 100$  ppm allowing for long term drift correction

### Applications:

- Frequency translation, clock smoothing and jitter attenuation of the input 10MHz reference
- Datacom - DSLAM, DSLAR, Access Nodes
- Cable modem head end
- Base Station - GSM, CDMA
- Telecom - SONET/SDH/ATM

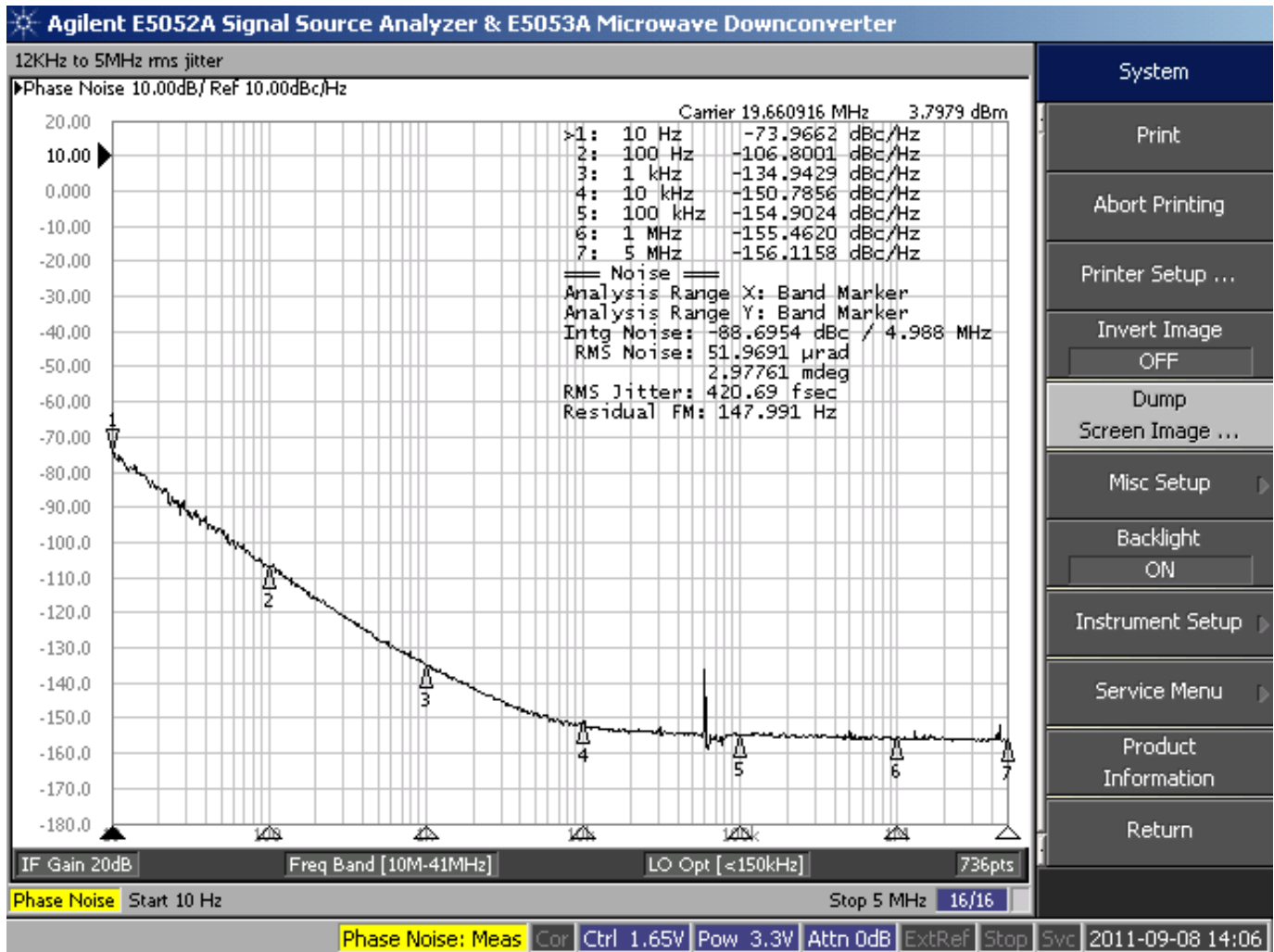
### Block Diagram



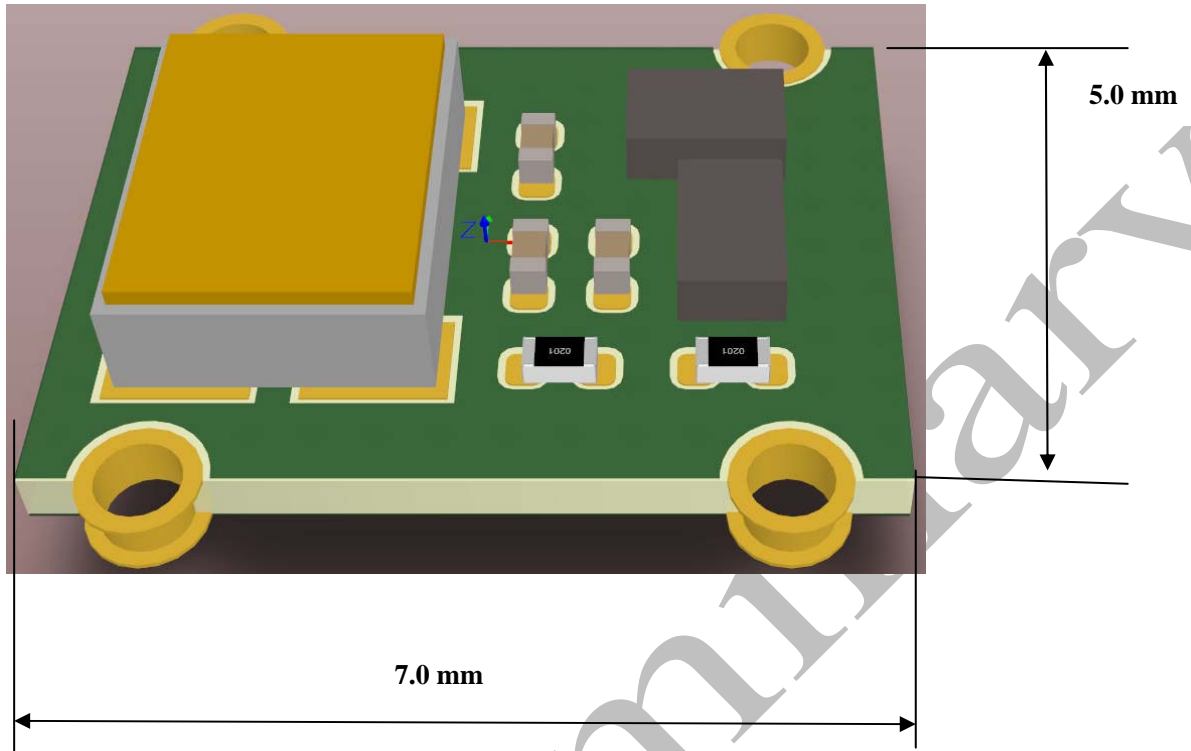
## 1.0 Electrical Specifications:

Parameters	Minimum	Typical	Maximum	Units	Notes
Reference Input		10.000		MHz	
<b>Reference Input Waveform</b>					
Level "1" (Logic High)	2.00		5.50	Volts	
Level "0" (Logic Low)			0.80	Volts	CMOS & TTL Compatible
Rise & Fall Time			10.0	ns	
Duty Cycle	40		60	%	
<b>Translated Output</b>					
Standard Available Frequencies	20.000 & 40.000 MHz				
Operating Temperature Range	-40		+85	° C	
Current Drain		5.0	10.0	mA	
Supply Voltage (Vdd)	3.135	3.30	3.465	Volts	
All Inclusive Frequency Stability of the VCXO			±50.00	ppm	Includes set tolerance, shift through reflow, stability over temperature, load pulling, frequency pushing and 10-years of Aging
VCXO pull range	±100.0			ppm	Sufficient frequency pull is designed-in to provide long-term frequency lock capability
<b>RF Output Waveform</b>					
<b>LVC MOS</b>					
Level "1" (Logic High)	0.9*Vdd			Volts	
Level "0" (Logic Low)			0.1*Vdd	Volts	
Load		15		pf	
Rise & Fall Time			3.0	ns	
Duty Cycle	45		55	%	
<b>Lock Time</b>		3.0	5.0	ms	
<b>Spectral Content</b>					
Spurious Response	-50	-70		dBc	
Phase Noise @ 20MHz Carrier (Vdd=3.3V)					
@ 1,000 Hz offset		-134		dBc / Hz	
@ 10,000 Hz offset		-150		dBc / Hz	
@ 100,000 Hz offset		-154		dBc / Hz	
@ 1,000,000 Hz offset		-155		dBc / Hz	

## 2.0 Free Running VCXO Phase Noise without Lock @ 19.660916MHz carrier



### 3.0 Package Outline



**4.0 Reel Size:** 1k units per reel

### 5.0 Part Identification

ABFT -  MHz - T



Frequency in MHz
20.000 MHz
<i>Or</i>
40.000 MHz

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## ABRACON:

[ABFT-20.000MHz-T](#) [ABFT-20.000MHz-T2](#) [ABFT-40.000MHz-T](#) [ABFT-40.000MHz-T2](#)