

REFERENCE PHASE LOCKED TRANSLATOR

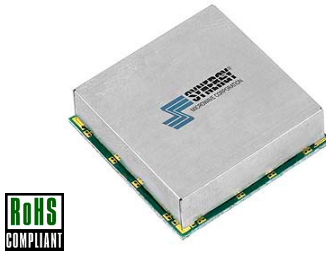
SURFACE MOUNT MODEL: FCTS1000-10-5

FIXED FREQUENCY

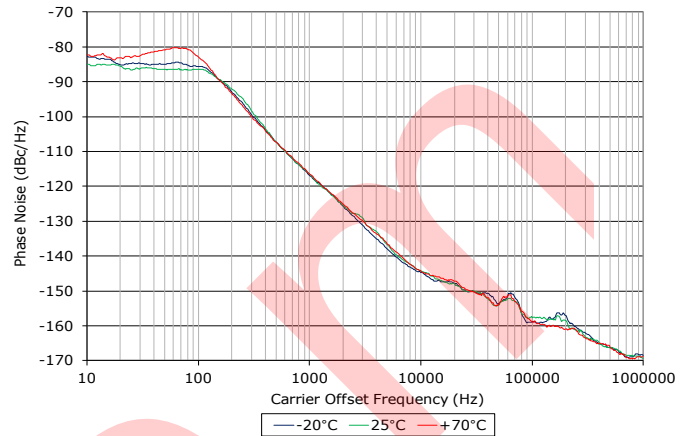
1000 MHz

FEATURES:

- ▶ Ultra-Low Phase Noise
- ▶ No Programming Required
- ▶ Lead Free - RoHS Compliant
- ▶ Patented REL-PRO Technology
- ▶ Small Size, Surface Mount



Phase Noise (Measured with Agilent E5052A or R&S FSUP-26/27)



SPECIFICATIONS

Frequency	1000 MHz												
Reference Input Frequency	10 MHz ¹												
Reference Input Voltage	1.0 to 3.3 V p-p												
Bias Voltage	<table><tr><th>Vcc</th><th>V (Vdc)</th><th>I (mA Max.)</th></tr><tr><td>Digital</td><td>+5</td><td>25</td></tr><tr><td>Tune</td><td>+12</td><td>10</td></tr><tr><td>VCO</td><td>+5</td><td>35</td></tr></table>	Vcc	V (Vdc)	I (mA Max.)	Digital	+5	25	Tune	+12	10	VCO	+5	35
Vcc	V (Vdc)	I (mA Max.)											
Digital	+5	25											
Tune	+12	10											
VCO	+5	35											
Output Power	-3 dBm (Min.)												
Spurious Suppression	80 dB (Typ.)												
Harmonic Suppression	25 dB (Typ.)												
Output Impedance	50 Ohms (Nom.)												
Lock Detect Indicator	CMOS 3.3 V												
Typical Phase Noise	<table><tr><th>Offset</th><th>Phase Noise</th></tr><tr><td>@ 100 Hz</td><td>-80 dBc/Hz</td></tr><tr><td>@ 1 kHz</td><td>-115 dBc/Hz</td></tr><tr><td>@ 10 kHz</td><td>-141 dBc/Hz</td></tr><tr><td>@ 100 kHz</td><td>-158 dBc/Hz</td></tr></table>	Offset	Phase Noise	@ 100 Hz	-80 dBc/Hz	@ 1 kHz	-115 dBc/Hz	@ 10 kHz	-141 dBc/Hz	@ 100 kHz	-158 dBc/Hz		
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@ 100 Hz	-80 dBc/Hz												
@ 1 kHz	-115 dBc/Hz												
@ 10 kHz	-141 dBc/Hz												
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Operating Temperature Range	-20 to +70 °C												

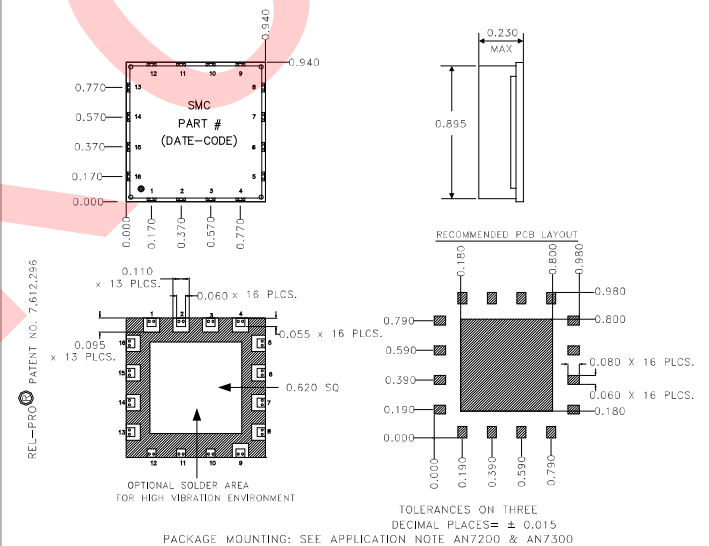
¹ External 10 MHz reference sources should have phase noise better than -138 dBc/Hz @ 50 Hz offset to achieve published specifications.

Absolute Maximum Ratings

Storage Temp. Range	-40 to +85 °C
Bias Voltage (Digital)	+5.25 V
Bias Voltage (Tune)	+13.0 V
Bias Voltage (VCO)	+5.5 V

Patent : <http://www.synergymwave.com/patents>

Package # 273LF



PORT CONFIGURATION

Pin 6 - Ref. Input	Pin 13 - RF Out	NC - Not Connected
Pin 7 - Vcc 1 (Digital)	Pin 14 - Lock Detect *	
Pin 8 - Vcc 2 (Tune)	Pin 1,2,3,4,5,15,16 - NC	
Pin 9 - Vcc 3 (VCO)	Pin 10,11,12 - GND.	

* High when locked (source/sink 500 uA)

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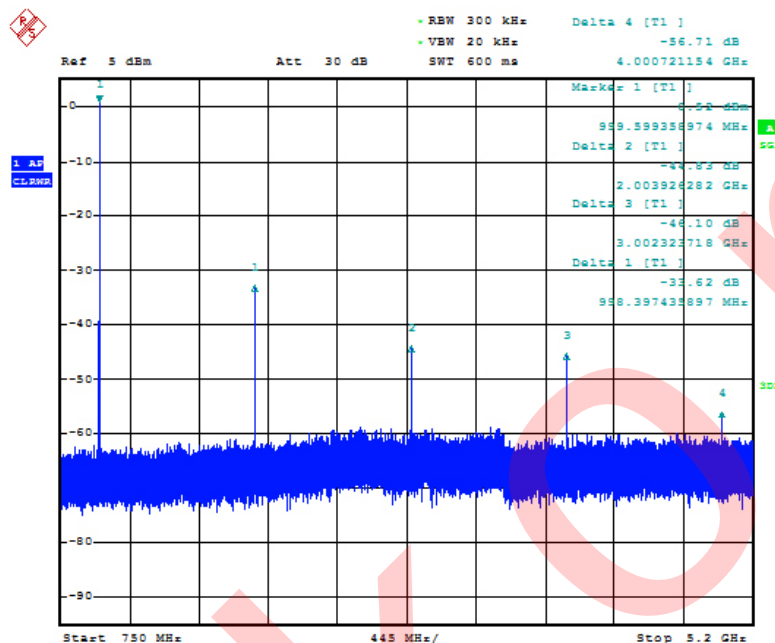
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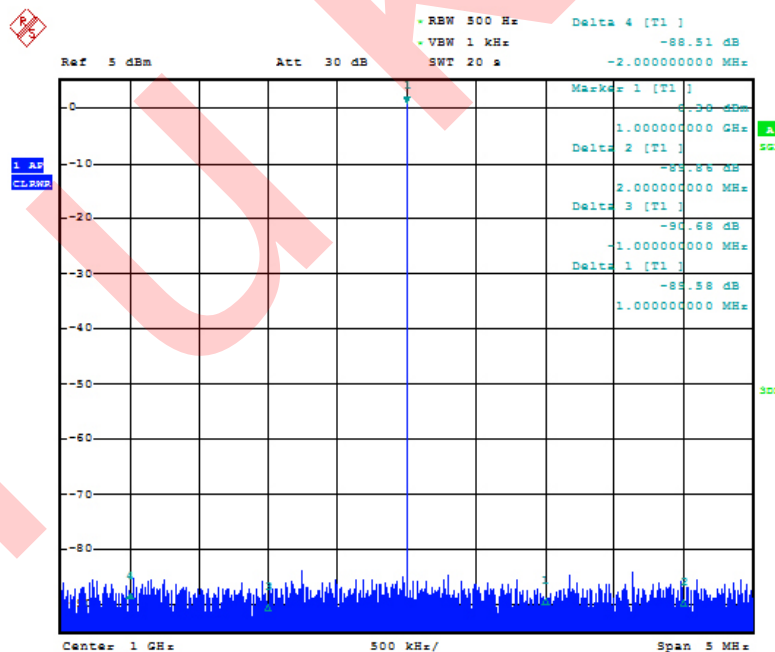
1000 MHz

HARMONIC SUPPRESSION

@ -20 °C



REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

REFERENCE PHASE LOCKED TRANSLATOR

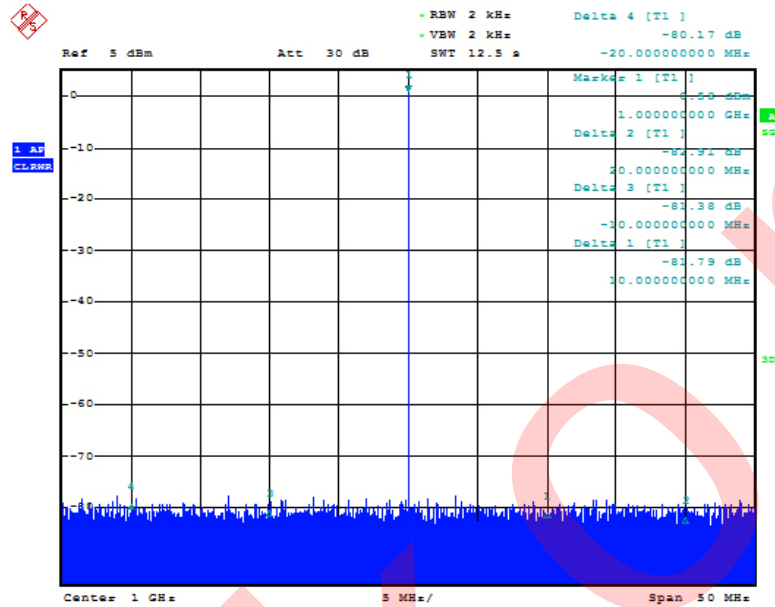
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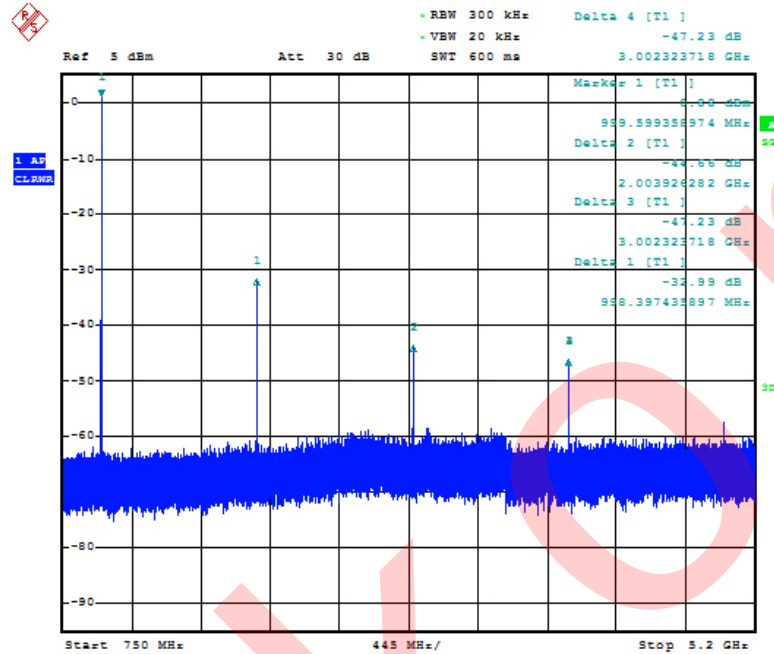
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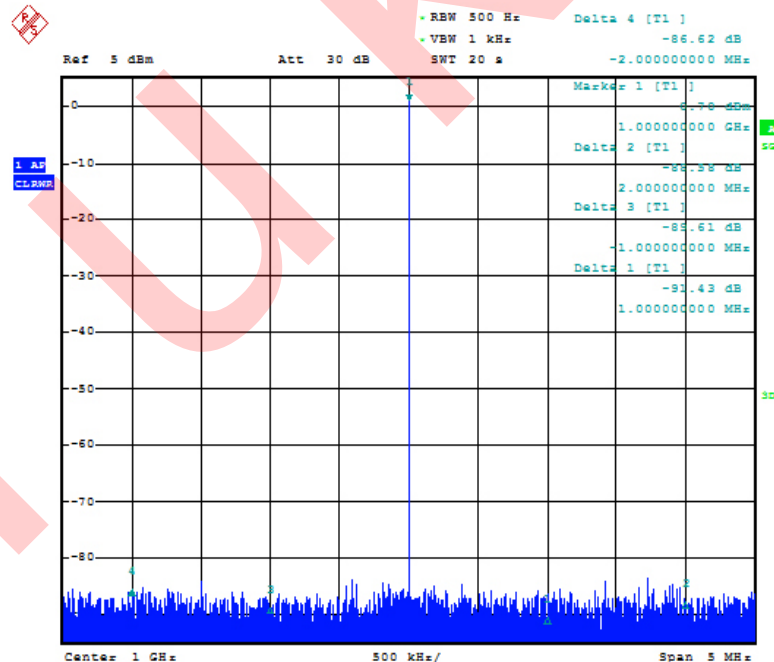
1000 MHz

HARMONIC SUPPRESSION

@ +25 °C



REFERENCE SIDEBAND SUPPRESSION



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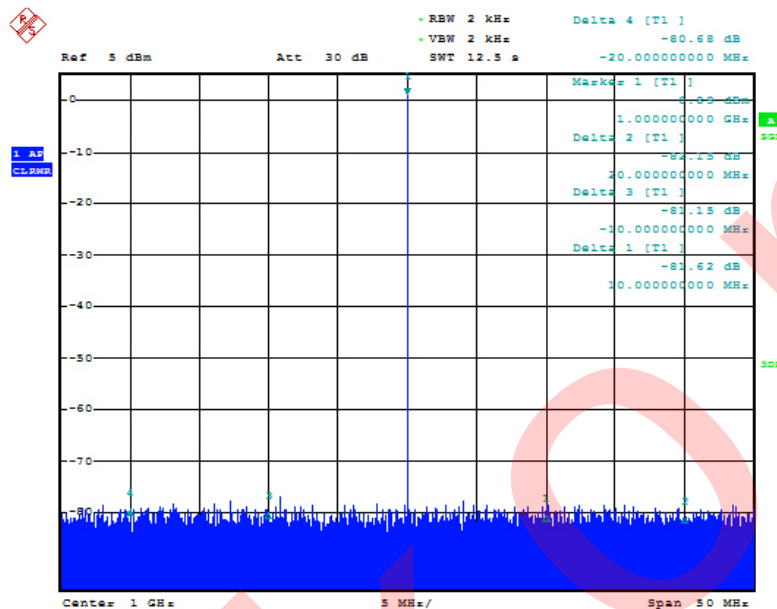
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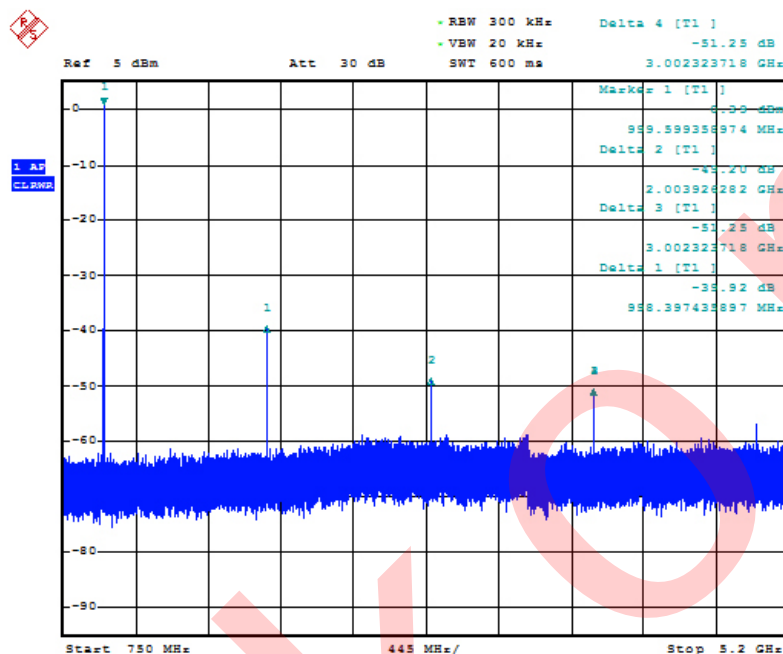
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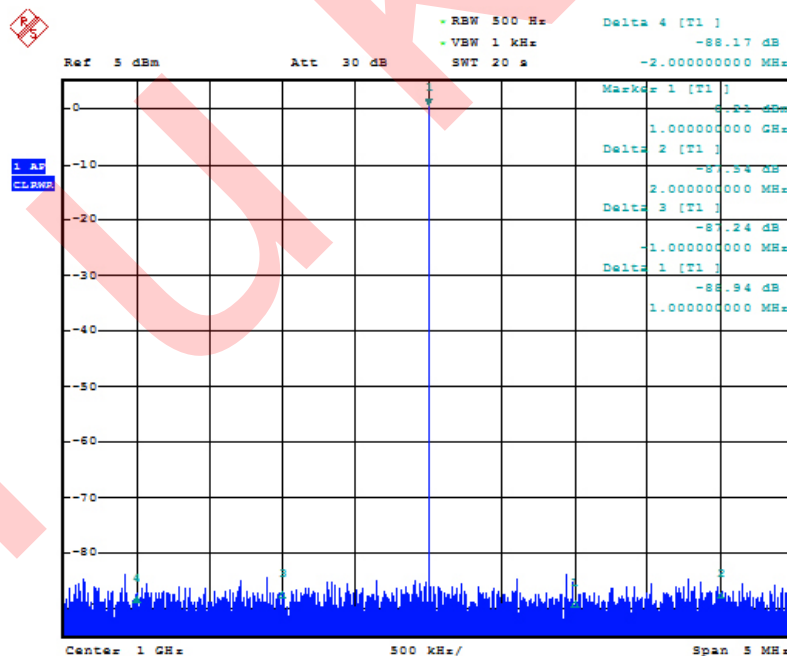
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HARMONIC SUPPRESSION

@ +70 °C



REFERENCE SIDEBAND SUPPRESSION



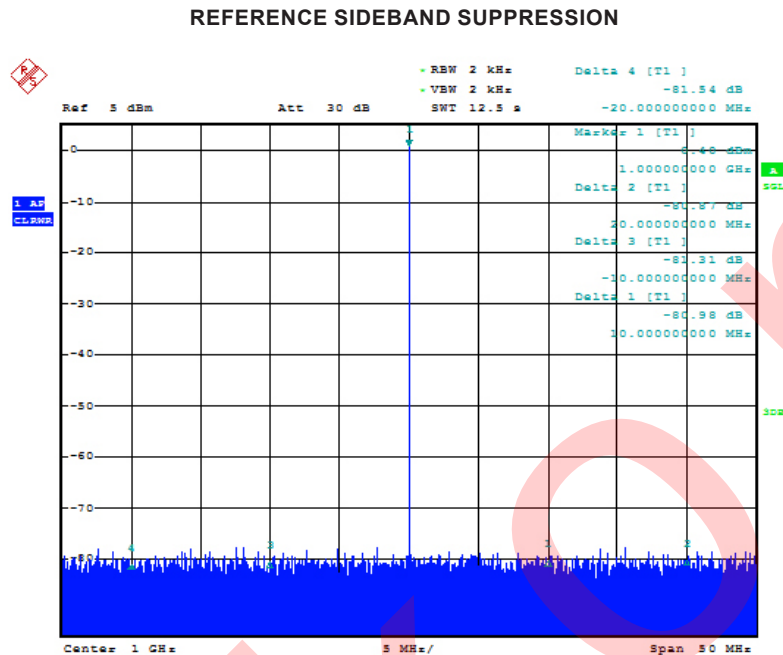
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