

REFERENCE PHASE LOCKED TRANSLATOR

SURFACE MOUNT MODEL: FCTS1000-100-5

FIXED FREQUENCY

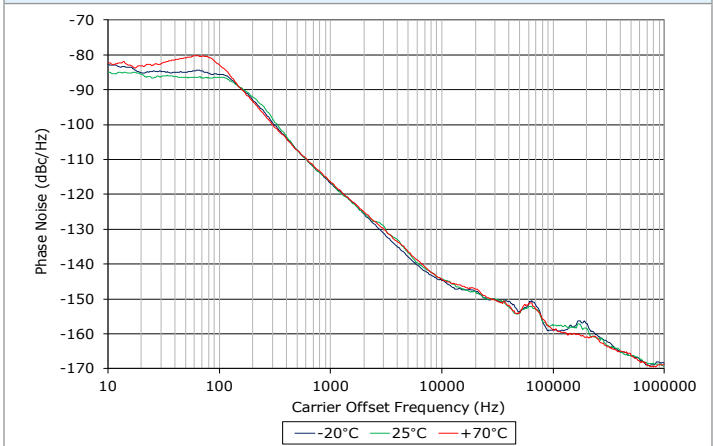
1000 MHz

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	100 MHz ¹												
Reference Input Voltage	1.0 to 3.3 V p-p												
Bias Voltage	<table border="1"> <thead> <tr> <th>Vcc</th> <th>V (Vdc)</th> <th>I (mA Max.)</th> </tr> </thead> <tbody> <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> </tbody> </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 border="1"> <thead> <tr> <th>Offset</th> <th>Phase Noise</th> </tr> </thead> <tbody> <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> </tbody> </table>	Offset	Phase Noise	@ 100 Hz	-80 dBc/Hz	@ 1 kHz	-115 dBc/Hz	@ 10 kHz	-141 dBc/Hz	@ 100 kHz	-158 dBc/Hz		
	Offset	Phase Noise											
	@ 100 Hz	-80 dBc/Hz											
	@ 1 kHz	-115 dBc/Hz											
@ 10 kHz	-141 dBc/Hz												
@ 100 kHz	-158 dBc/Hz												
Operating Temperature Range	-20 to +70 °C												

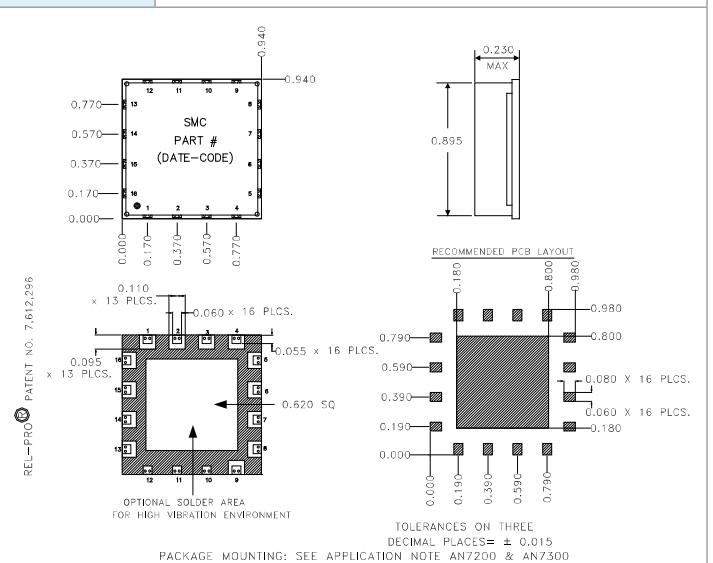
¹ External 100 MHz reference sources should have phase noise better than -120 dBc/Hz @ 50 Hz offset to achieve published specifications.

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)

REFERENCE PHASE LOCKED TRANSLATOR SURFACE MOUNT MODEL: FCTS1000-100-5

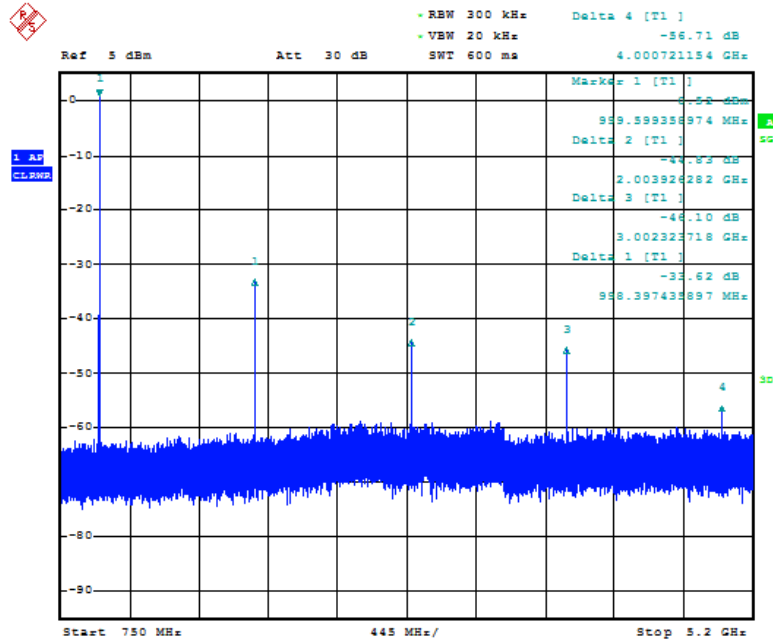
FIXED FREQUENCY

1000 MHz

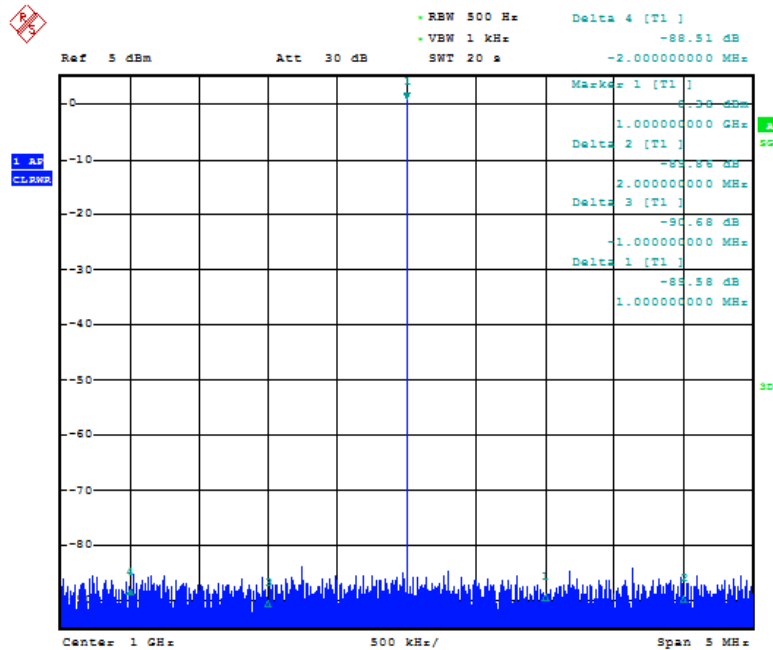
@ -20 °C

PERFORMANCE PLOTS

HARMONIC SUPPRESSION



REFERENCE SIDEBAND SUPPRESSION



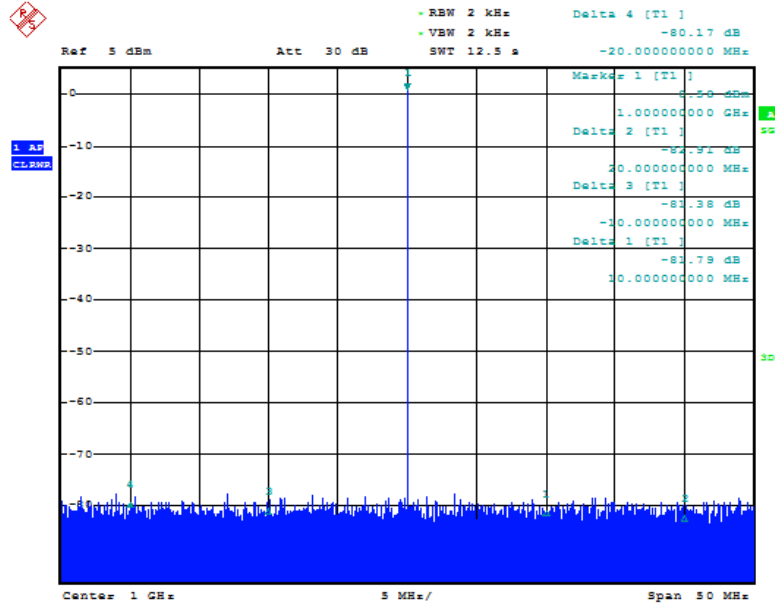
REFERENCE PHASE LOCKED TRANSLATOR SURFACE MOUNT MODEL: FCTS1000-100-5

FIXED FREQUENCY

1000 MHz

REFERENCE SIDEBAND SUPPRESSION

@ -20 °C



PERFORMANCE PLOTS

REFERENCE PHASE LOCKED TRANSLATOR

SURFACE MOUNT MODEL: FCTS1000-100-5

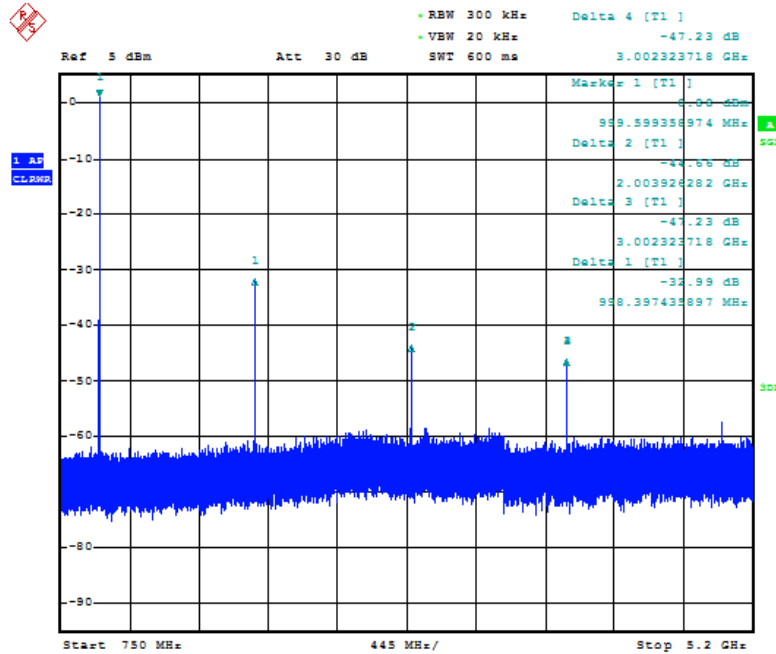
FIXED FREQUENCY

1000 MHz

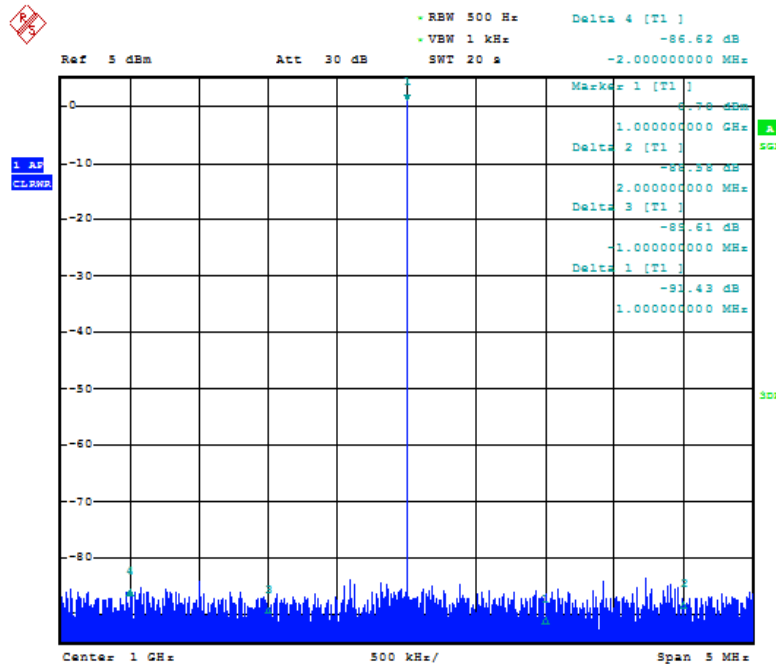
@ +25 °C

PERFORMANCE PLOTS

HARMONIC SUPPRESSION



REFERENCE SIDEBAND SUPPRESSION



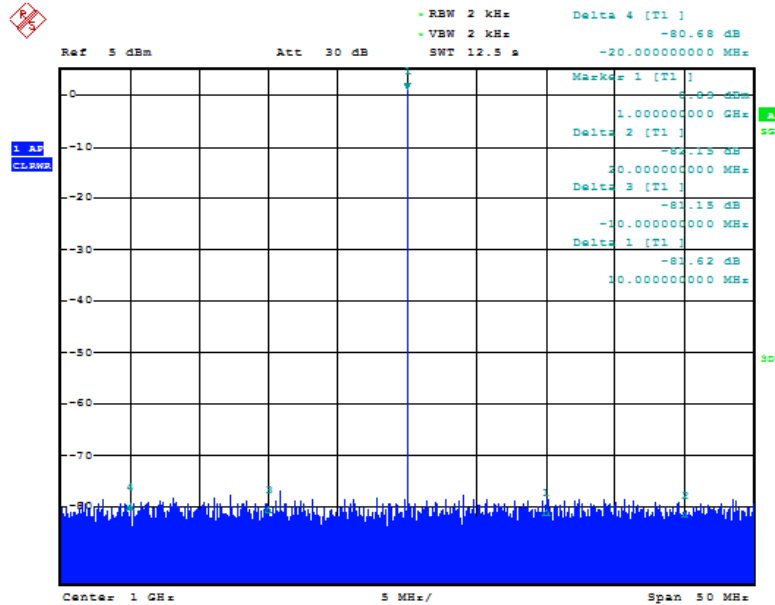
REFERENCE PHASE LOCKED TRANSLATOR SURFACE MOUNT MODEL: FCTS1000-100-5

FIXED FREQUENCY

1000 MHz

REFERENCE SIDEBAND SUPPRESSION

@ +25 °C



PERFORMANCE PLOTS

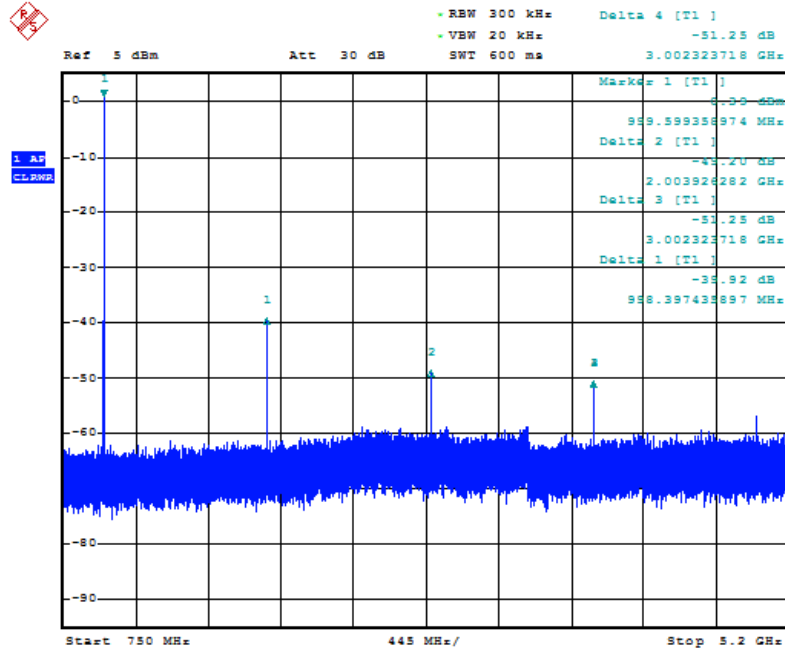
REFERENCE PHASE LOCKED TRANSLATOR SURFACE MOUNT MODEL: FCTS1000-100-5

FIXED FREQUENCY

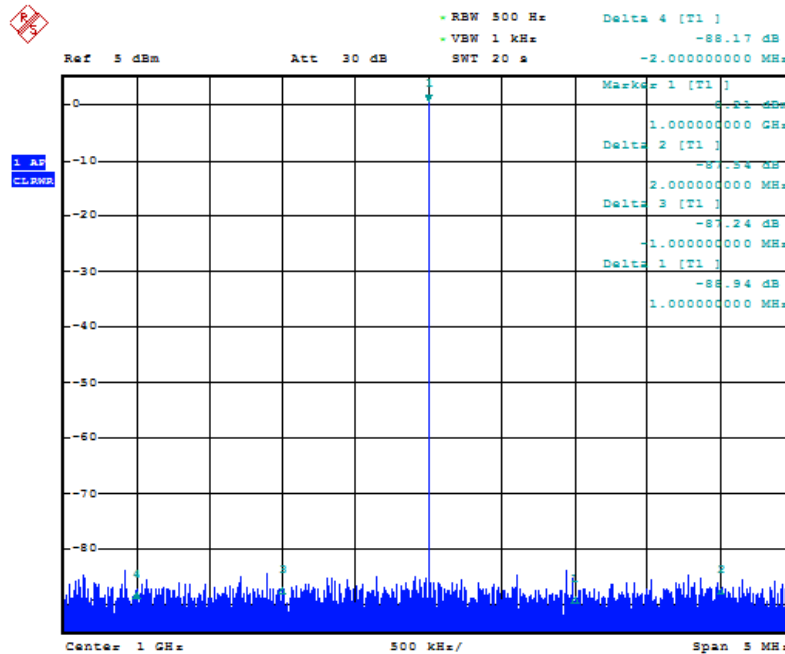
1000 MHz

HARMONIC SUPPRESSION

@ +70 °C



REFERENCE SIDEBAND SUPPRESSION



PERFORMANCE PLOTS

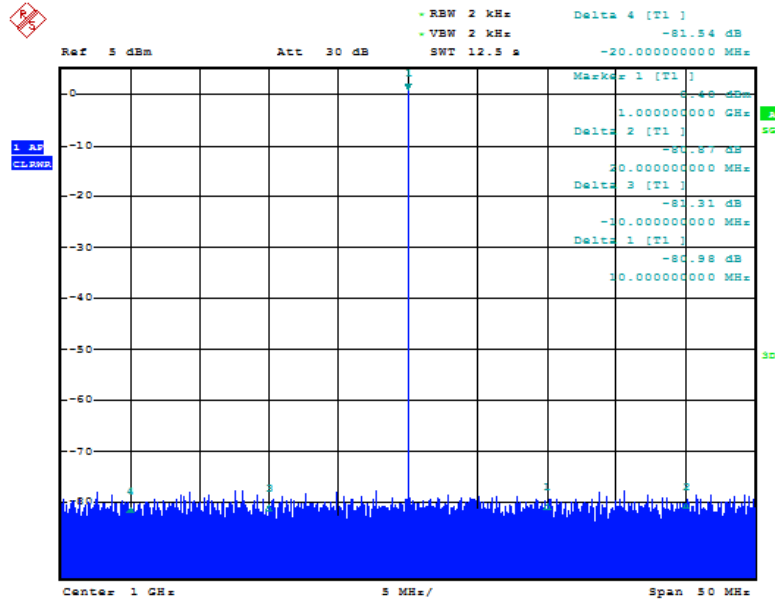
REFERENCE PHASE LOCKED TRANSLATOR SURFACE MOUNT MODEL: FCTS1000-100-5

FIXED FREQUENCY

1000 MHz

REFERENCE SIDEBAND SUPPRESSION

@ +70 °C



PERFORMANCE PLOTS